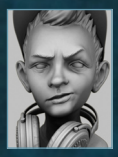
3dcreative

3dtotal.com

Issue 066 February 2011



Interview
Benoit Regimbal



The Gallery
Ke Weilin
Rishikesh Nandlaskar,
& more!



Project Overview
"AH-1Z Viper Helicopter"
by **Martin Kostov**

Look for this button inside

DOWNLOAD RESOURCES

- Free Scene & Textures

Cover image by Olive Titouan

CREATURE FROM THE DEEP

OLIVE TITOUAN CREATES THIS SLIPPERY AQUATIC MONSTER







Photoshop Post Effects

Richard Tilbury shows us how he would add smoke, sparks and glows to his 3D render in Photoshop.

Unreal Games Engine Tutorial

Andrew Finch continues to show us how to build our games level this month focussing on adding accessories and texturing.

Modeling A High-Poly Spaceship

In our **Creating the Celeritas** series we take a further step towards a finished image with **Djordjie Jovanovic**, **Luigi Terza** & **Tamás Gyermán**.



Editorial

Welcome to the February issue of 3DCreative. I wander how many of you made a New Year's resolution to try to improve your portfolio, or build on your modelling skills or maybe even get to grips with texturing using Photoshop. If this is your goal then this is the magazine you have been looking for!

We will start on this month's content by discussing this month's cover. Our ZBrush monsters series has produced some really great results! You can probably tell that we have been more than impressed with our artist's contributions by the amount of images from the series that we have given pride of place. This month is no exception, Olive Titouan shows us how he designed and created his fantastic aquatic monster. If you are a ZBrush user this is a must!

From the high poly to the low poly, this month's interview is with games industry pro Benoit Reginbal. Benoit is a master when it comes to creating low poly characters and painting textures. You will instantly recognise some of his models and will love his cool twist on familiar characters. Keep your eyes out for the items hidden in his models!

We will carry on the games theme and briefly make mention of our Unreal games engine tutorial. Andrew Finch is back again and in this issue he continues to show us how to make accessories for his scene and texture them using Photoshop. I hope your games level is coming on well.

3DTotal's Richard Tilbury is back again with the next chapter to his Photoshop Post effects series. Rich is a master of all CG trades but when it comes to Photoshop post effects Rich really knows what he is talking about. In this month's issue Rich shows us how he turned his basic render of a forge into a hot, glowing, steamy environment using only Photoshop. If you are making 3D stills Photoshop is valuable tool, and Rich's tips this month will really help you speed up your work flow and produce outstanding results.

Mapping and unwrapping is handled in this month's Creating the Celeritas tutorial and our trustworthy team of artists are back again. In 3dsmax we have Djordje Jovanovic, in Maya we have Luigi Terzi and in Cinema 4D we have Tamás Gyermán.
That leaves us with our Making of and galleries. This month's



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What's in this month?



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Character Artist



The Gallery
10 of the Best 3D Artworks



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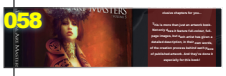
The Italian Cortyard
Chapter 4: Part 2 - Static textures and meshes



ZBrush Monster
Character Creation Chapter 5: Aquatic



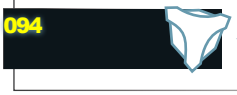
"AH-1Z Viper Helicopter"
Project Overview by Martin Kostov



"Mouse Love"
Digital Art Masters: Volume 5 - Free Chapter



Creating the Celeritas
Chapter 4: Mapping and unwrapping



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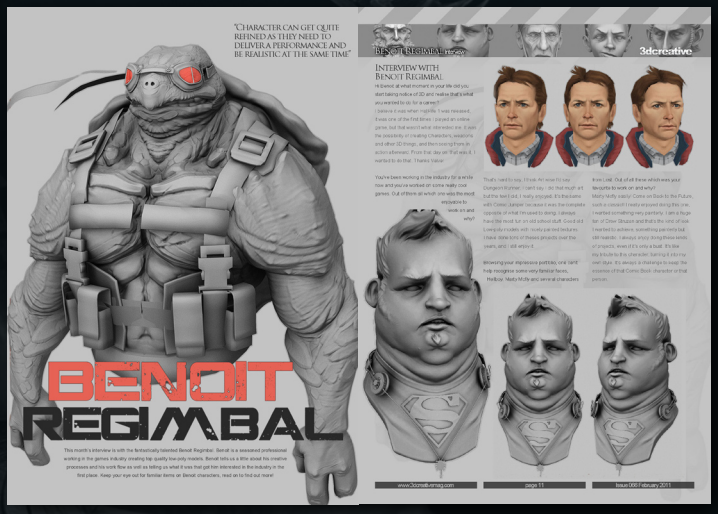


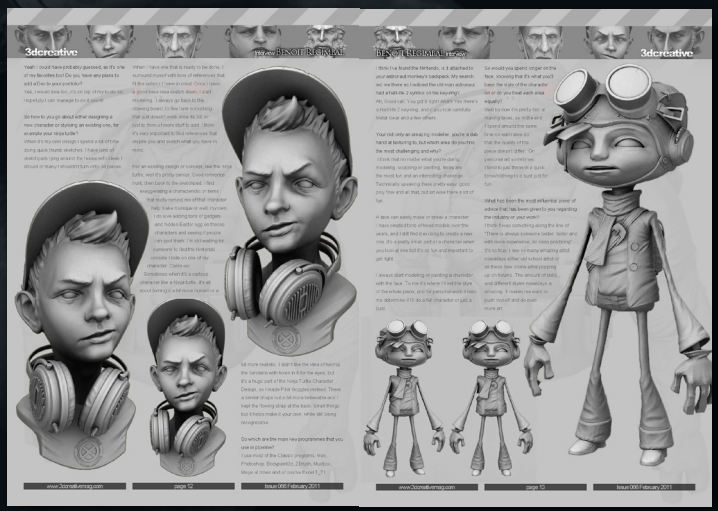
Making of is by Martin Kostov with some help from Ivo Jovchev. Martin gives us a great insight into his entire workflow including high poly modeling and texturing. Our gallery is also full of visual treats including images from Sébastien Rousseau, Ke Weilin, Rishikesh Nandlaskar and Carlos Ortega. I think there's enough in there to keep you going until next month, so until then have fun.



Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!







Setting up your PDF reader

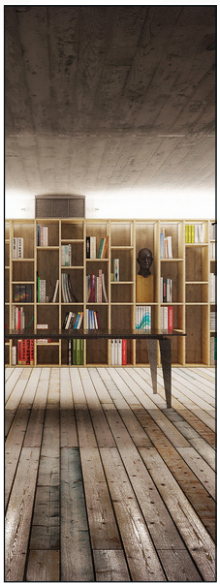
For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

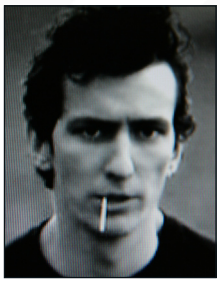
1. Open the magazine in Reader;
2. Go to the VIEW menu, then PAGE DISPLAY;
3. Select TWO-UP CONTINUOUS making sure that SHOW COVER PAGE is also selected.
That's it!

Contributing Artists

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com



Djordjie Jovanovic



As the son of a photographer Djordje became involved in visual arts from an early age. After finishing the High School for Design he graduated the University of Arts in Belgrade in the Computer Art and Design course. Currently he works as a freelance 3D artist specializing in a Hard Surface Environment modeling, texturing and Lighting.

http://djordjejovanovic.com/blog/

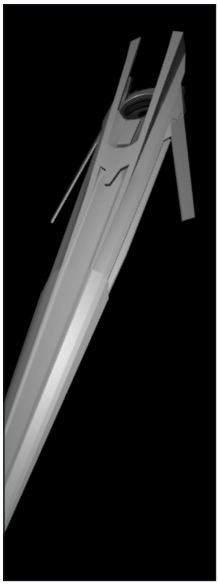
djordjexyz@gmail.com



Luigi Terza

Luigi Terzi works and lives in Torino (Italy). After a 10 year experience as illustrator and 3D artist in advertising he recently founded a company with other freelance artists called Blackbox .

gigiterzi@tiscalinet.it





Tamás Gyermán



Tamás Gyermán is a fan of all space and fantasy art. Above all he likes to create spaceships and grand space-scenes. He always uses powerful colors and contrasting lights in his images.

http://www.wmelone.com/cinemorx/index.html

tamas.gyerman@gmail.com



Richard Tilbury

Has had a passion for drawing since being a couple of feet tall. He studied fine art and was eventually led into the realm of computers several years ago. His brushes have slowly been dissolving in white spirit since the late 90s and now, alas, his graphics tablet has become their successor. He still sketches regularly, balancing his time between 2D and 3D.

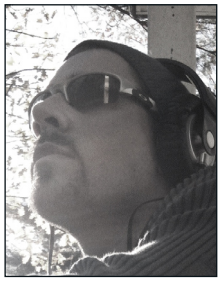
http:// www.richardtilburyart.com

rich@3dtotal.com





Benoit Regimbal



Benoit Regimbal is a character artist From Canada, and considers himself to be an old fashioned low poly, hand painted character artist. Benoit has been part of the games industry for a while and is still enjoying Creating Characters.

http://benregimbal.com/

ben@benregimbal.com



Andrew Finch

Aged 28 and living in the great city of Birmingham, in the U.K. He has a degree in 3D Animation which inspired his passion for environment art. He now works as an environment artist at Codemasters. He says, "Working in the games industry is exciting: you never know what the next project will be and there's always something new to learn. This helps to keep you creative and grow as an artist." afinchy@googlemail.com



Would You Like to Contribute to 3DCreative or 2DArtist Magazine?

We are always looking for tutorial artists, gallery submissions, potential interviewees, 'making of' writers, and more. For more information, please send a link to your portfolio, or send examples, to: simon@3dtotal.com

Piracy Notice

February 2011 Update

3DTotal would like to thank everyone who has purchased the magazine, our anti-piracy efforts are already working and last month we received the most sales to date. With this continued push and support from the community we can make the mag even better. We plan to re-invest the profits back into the magazine and have already started discussions with elite artists to provide you with even more improved content. We're also considering many new wonderful ideas which we will start to reveal over the coming months.

Thanks again for your support.

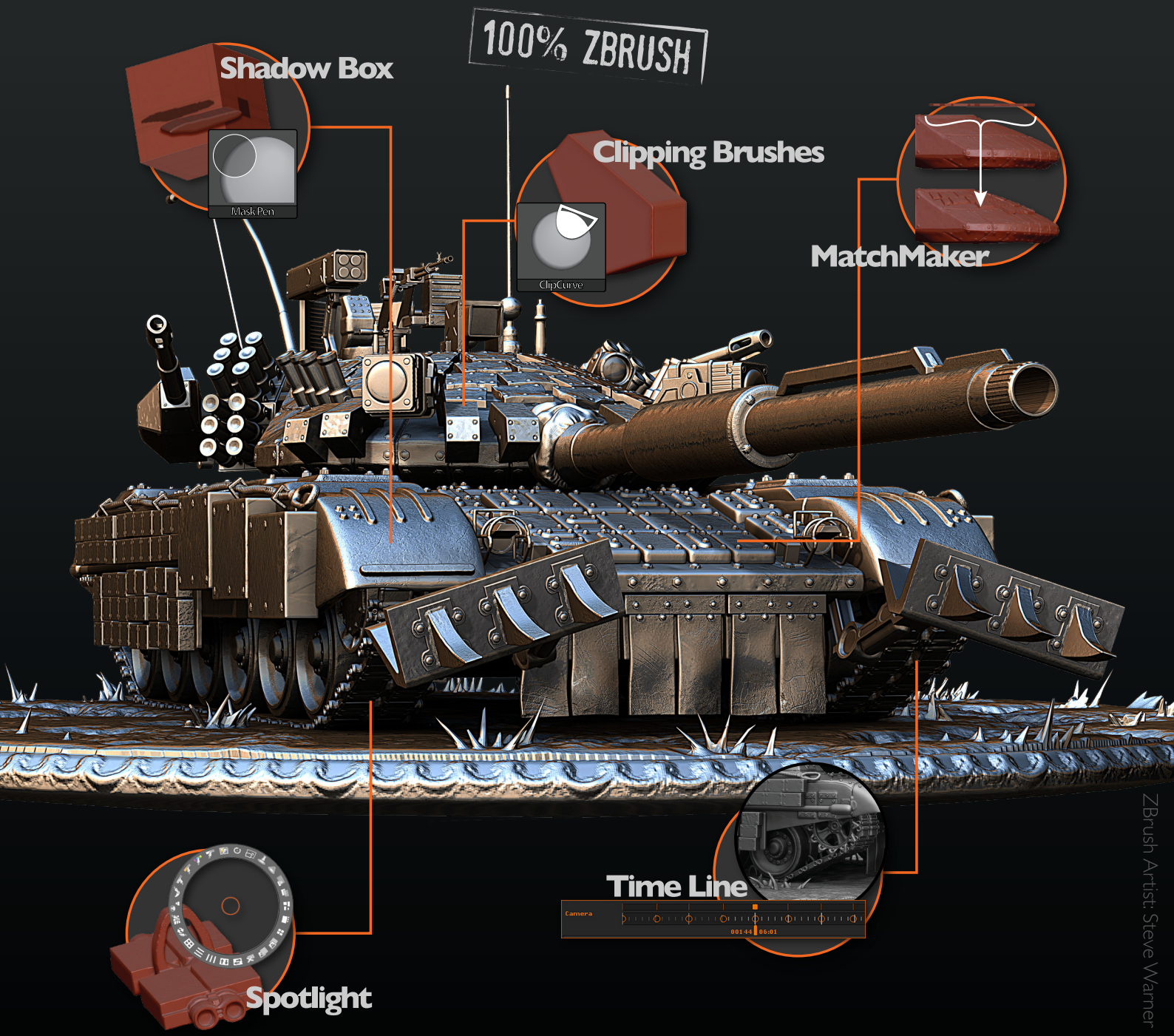
Previous Announcement
3DTotal.com Partnering With ConceptArt.org

3DTotal is glad to announce that the successful anti-piracy system used on ConceptArt.Org to protect it's video content is now being used to bring an end to piracy of the content produced by the incredible artists who support our magazines, website and tutorials which are enjoyed by so many. This anti-piracy effort has brought to light many of the users who have been pirating content illegally in the ConceptArt.org community and it is now assisting with protecting and enforcing copyrights here.

3DTotal greatly appreciates all our customers and the incredible artists who support this community with products. Piracy has become a major obstacle that must be resolved in order to see the artists who create these works and 3DTotal see success long into the future. Without the content sold here, this community and resource would not be what it is. With the support of our customers we have been able to offer an ever increasing stable of great content at affordable prices. Thank you all for your continued support. We are here to help teach and assist artists worldwide.

ZBrush 4

Conceptualize. Create. Complete.



ZBrush Artist: Steve Warner

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- Jean-Luc Delhougne
Animation Mentor Graduate

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FOLLOW US ON:

"A face can easily make or break a character. I have created tons of head models over the years, and I still find it exciting to create a new one."



BENOIT REGIMBAL

This month's interview is with the fantastically talented Benoit Regimbal, a seasoned professional who creates top quality low poly models for the games industry. Benoit tells us a little about his creative processes and his workflow, as well as revealing what it was that got him interested in the industry in the first place. Keep your eye out for familiar items on Benoit characters, and read on to find out more!

INTERVIEW WITH BENOIT REGIMBAL



Hi Benoit. At what moment in your life did you start taking notice of 3D and realize that's what you wanted to do for a career?

I believe it was when *Half-Life* 1 was released. It was one of the first times I played an online game, but that wasn't what interested me. It was the possibility of creating characters, weapons and other 3D things, and then seeing them in action afterward. From that day on, that was it - I wanted to do that. Thanks Valve!

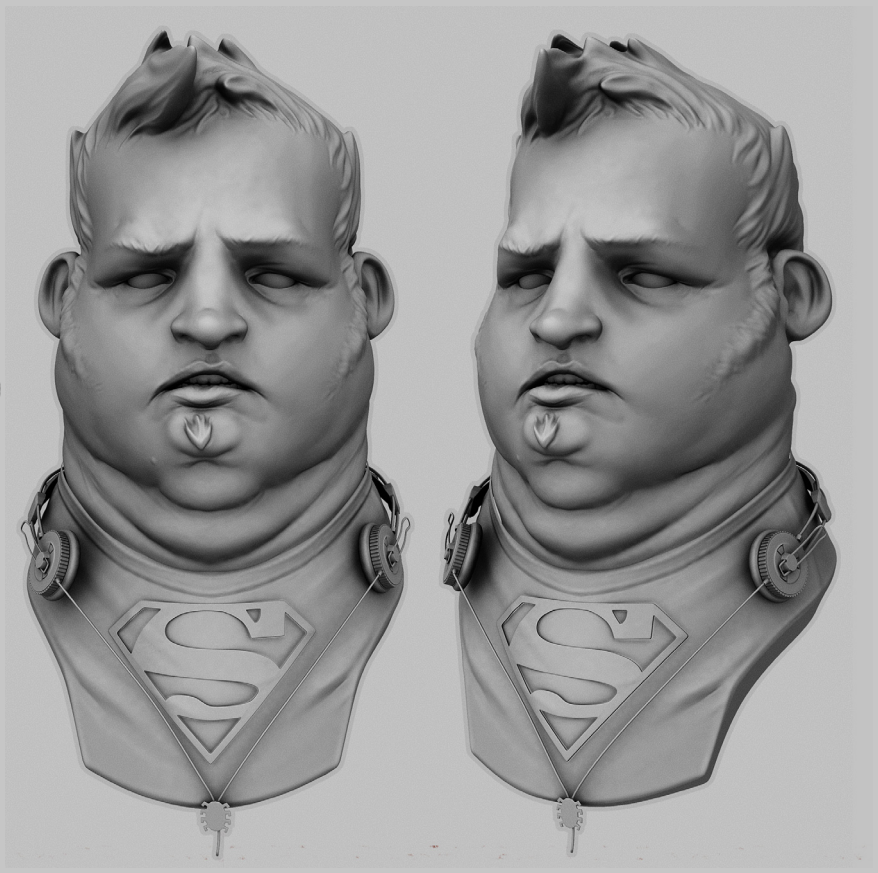
You've been working in the industry for a while now and you've worked on some really cool games. Out of them all, which one was the most enjoyable to work on and why?



That's hard to say, I think art-wise I'd say *Dungeon Runners*. I can't say I did that much art but the few I did, I really enjoyed. It's the same with *Comic Jumper* because it was the complete opposite of what I'm used to doing. I always have the most fun on old school stuff. Good old low poly models with nicely painted textures. I have done tons of these projects over the years, and I still enjoy it.

Browsing your impressive portfolio, one can't help recognize some very familiar faces: Hellboy, Marty McFly and several characters from *Lost*. Out of all these, which was your favorite to work on and why?

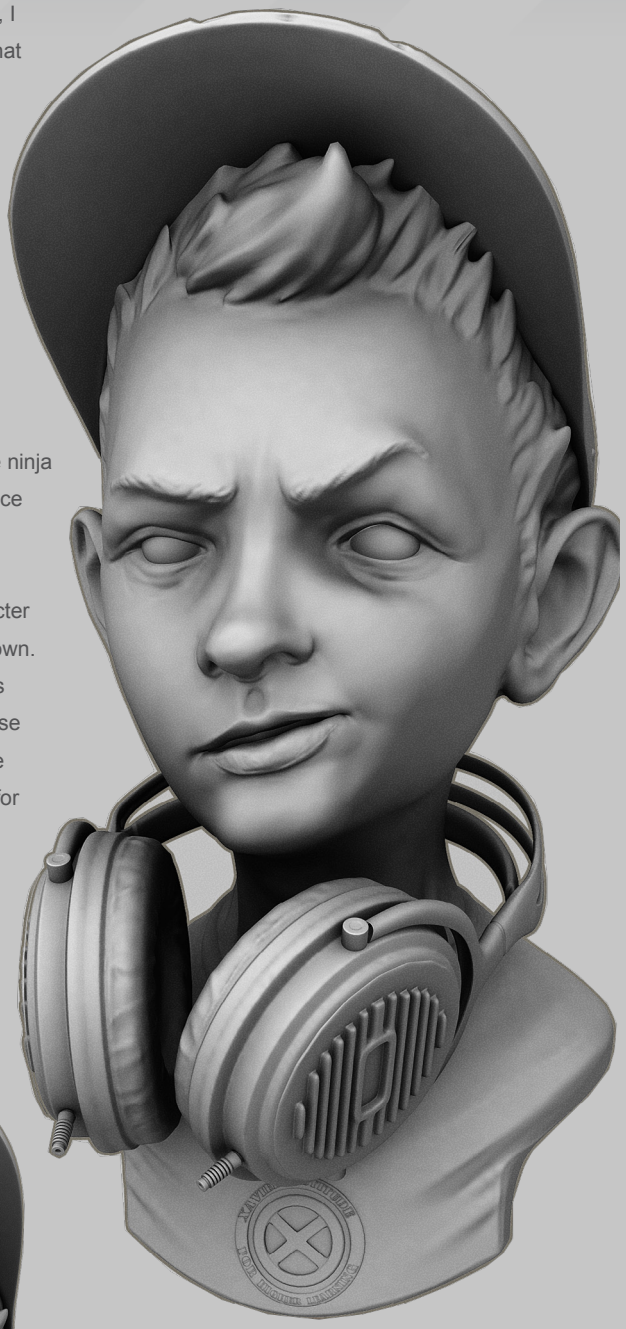
Marty McFly easily! Come on, *Back to the Future* is such a classic!! I really enjoyed doing that one. I wanted something very painterly. I am a huge fan of Drew Struzan and that's the kind of look I wanted to achieve; something painterly but still realistic. I always enjoy doing these kinds of projects, even if it's only a bust. It's like my tribute to this character, turning it into my own style. It's always a challenge to keep the essence of that comic book character or that person.



Yeah, I probably could have guessed, as it's one of my favorites too! Do you have any plans to add a Doc Brown to your portfolio?
Yes, I would love to; it's on top of my to-do list. Hopefully I can manage to do it soon!!

So how do you go about either designing a new character or stylizing an existing one, for example your ninja turtle?
When it's my own design I spend a lot of time doing quick thumb sketches. I have tons of sketchpads lying around the house with ideas I should, or many I shouldn't, turn into 3D pieces. When I have one that is ready to be done, I surround myself with tons of references that fit the subject I have in mind. Once I have a good base idea sketch down, I start modeling. I always go back to the drawing board, to fine-tune something that just doesn't work once it's 3D, or just to think of more stuff to add. I think it's very important to find references that inspire you and to sketch what you have in mind.

For an existing design or concept, like the ninja turtle, well it's pretty similar. Good reference hunt, then back to the sketchpad. I find exaggerating a characteristic or items that really remind me of that character help make it unique or well, my own. I do love adding tons of gadgets and hidden Easter eggs on these characters and seeing if people can spot them. I'm still waiting for someone to find the Nintendo console I hide on one of my characters. Come on!





Sometimes when it's a cartoon character like a ninja turtle, it's all about making it a bit more human or a bit more realistic. I didn't like the idea of having the bandana with holes in it for the eyes, but it's a huge part of the character design, so I made pilot goggles instead. They're a similar shape but a bit more believable and I kept the flowing strap at the back. Small things, but it helps make it your own, while still being recognisable.



So what are the main key programs that you use in pipeline?
I use most of the classic programs: Max, Photoshop, Bodypaint 3D, ZBrush, Mudbox, Maya at times and of course, Excel! [Laughs].

I think I've found the Nintendo - is it attached to your astronaut monkey's backpack? My search led me there as I noticed the old man astronaut had a *Half-Life 2* symbol on his key-ring?
Ah, good call. You got it right! [Laughs]. Yes there's a *Half-Life 2* keyring, and if you look carefully, *Metal Gear Solid* and a few others.

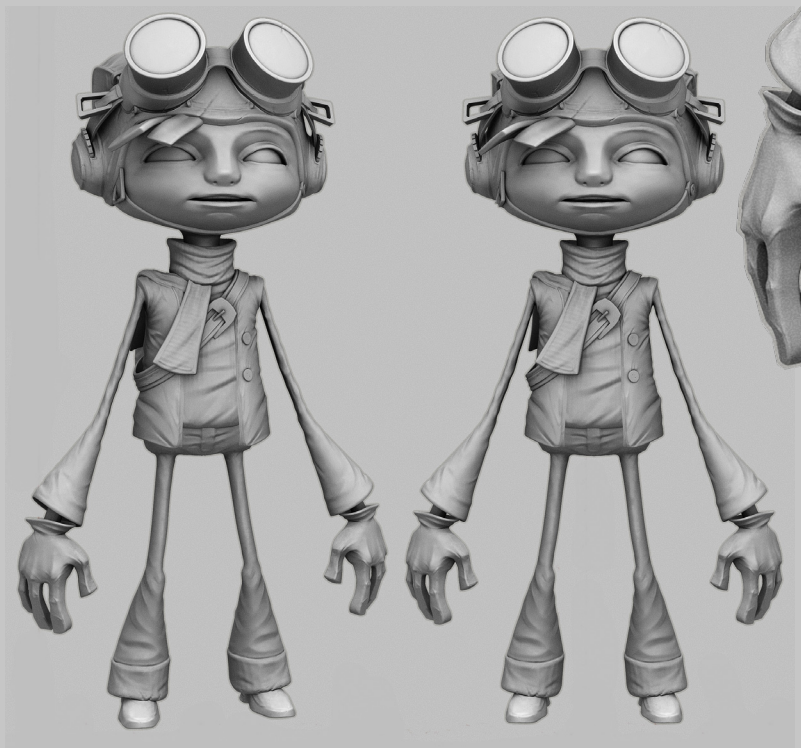
You're not only an amazing modeler, you're a dab-hand at texturing too, but which area do you find the most challenging and why?
I think that no matter what you're doing - modeling, sculpting or painting - faces are the most fun and an interesting challenge. Technically-speaking they're pretty easy, with good poly flow and all that, but art-wise there a lot of fun.

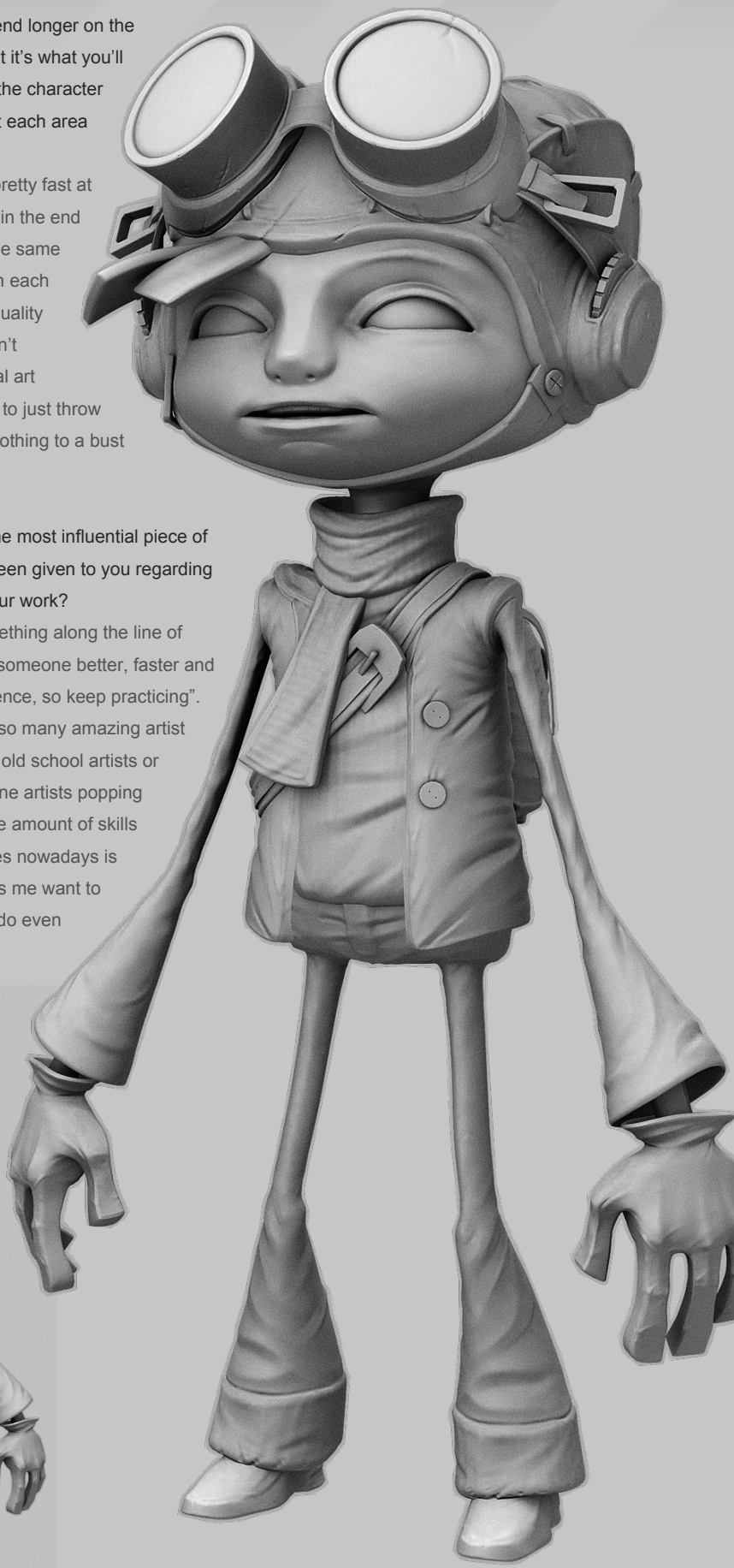
A face can easily make or break a character. I have created tons of head models over the years, and I still find it exciting to create a new one. It's a pretty small part of a character when you look at one, but it's so fun and important to get right.

I always start modeling or painting a character with the face. To me it's where I'll set the style of the whole piece, and for personal work it help me determine if I'll do a full character or just a bust.

So would you spend longer on the face, knowing that it's what you'll base the style of the character on or do you treat each area equally?
Well by now I'm pretty fast at making faces, so in the end I spend around the same amount of time on each area so that the quality of the piece doesn't differ. On personal art sometimes I tend to just throw in a quick torso/clothing to a bust just for fun.

What has been the most influential piece of advice that has been given to you regarding the industry or your work?
I think it was something along the line of "There is always someone better, faster and with more experience, so keep practicing". It's so true. I see so many amazing artist nowadays, either old school artists or all these new online artists popping up on forums. The amount of skills and different styles nowadays is amazing. It makes me want to push myself and do even more art.





Well it has been a pleasure chatting with you and I wish you all the best for the future. One last question before we call it a day: if you were given a brief to create a low poly character of yourself (having full rein to exaggerate anything to fit your personality), what would it be like?

If I had to create myself in low poly... well I have a pretty boring face, but it would look very tired from being overworked [Laughs]. I'm pretty tall, but I have a very long upper body and kind of short legs. It would be very interesting to look at!

BENOIT REGIMBAL

For more work by this artist please visit:
http://www.benregimbal.com
Or contact him at:
ben@benregimbal.com

Interviewed by: Richard Tilbury





CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING

FOLLOW THIS TUTORIAL SERIES ON PAGE 064



COMING UP IN THIS ISSUE...

This month our artists will show you how to map and unwrap our spaceship.

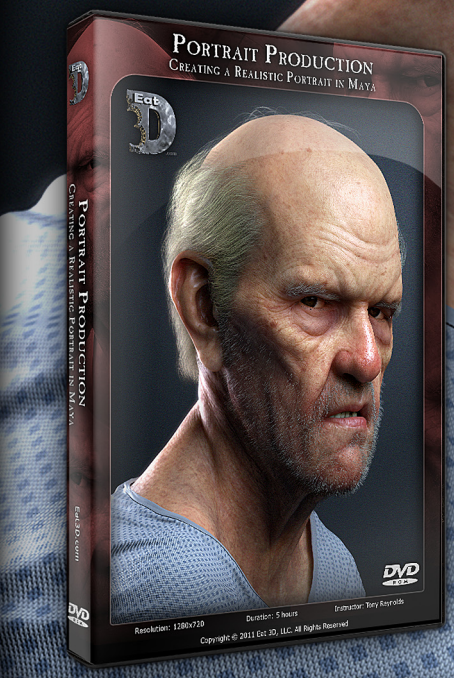
So if you're interested in seeing the forth chapter of this great series, please flip to the back of this magazine and enjoy.

3DS MAX - PAGE 064
MAYA - PAGE 072
CINEMA 4D - PAGE 088

CHAPTER 4 - MAPPING AND UNWRAPPING

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

New DVD Release



Portrait Production

Creating a Realistic Portrait in Maya

eat3d.com

The Gallery



This month we feature:

Olivier Pabilona

Bertrand Benoit

Luca Fiorentini

Rishikesh Nandlaskar

Carlos Ortega

Ke Weilin

Lokendra Singh Shekhawat

Hugues Thibodeau

Daniel Schmid

Sébastien Rousseau

San Juan

Daniel Schmid
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Kei Philip's Mermaid Tea Party

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Tribeca Loft

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Desert Knight-errant

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FatGuy

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http://www.locky3d.com

locky10@gmail.com



Frankenstein Warrior

Rishikesh Nandlaskar

rishikesh.nandlaskar@gmail.com




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modo is for artists

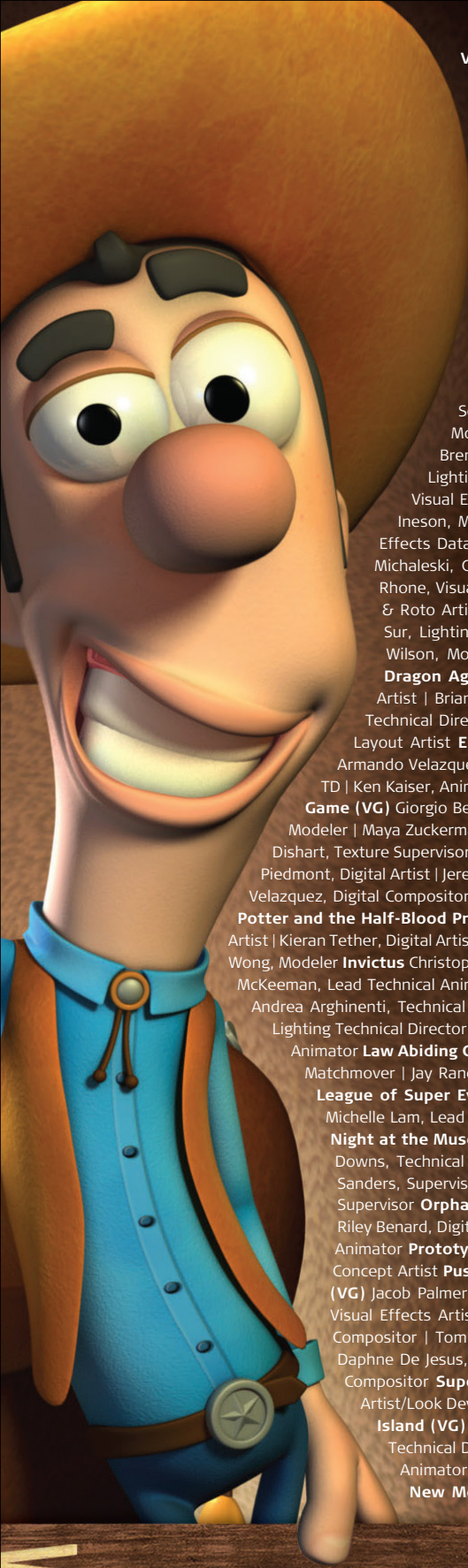
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VFS student work by Thiago Martins

PHOTOSHOP POST EFFECTS



Photoshop is becoming more and more important in the work low of a 3D artist. If you are creating 3D stills, using Photoshop is a great way to complete your image and add effects quickly and effectively. In this tutorial series Photoshop pro Richard Tilbury will be showing how to totally transform an image in Photoshop. We will start each chapter with a textured 3D model. That model will then be put into Photoshop, where Rich will turn it into a polished image. Using Photoshop can be daunting to 3D artists as many see is as a tool for digital painters, but Rich has provided simple, step-by-step techniques and methods that will transform your work flow forever.

Chapter 1 | January Issue 065
Fire, Heat Haze and Smoke

Chapter 2 | This Issue
Sparks and Glows

Chapter 3 | Next Issue
Space

Chapter 4 | April Issue 068
Underwater

CHAPTER 2 - SPARKS AND GLOWS

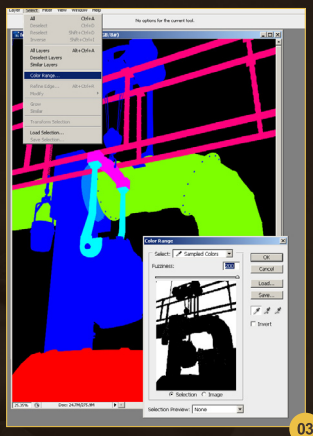
Software used: 3ds Max & Photoshop

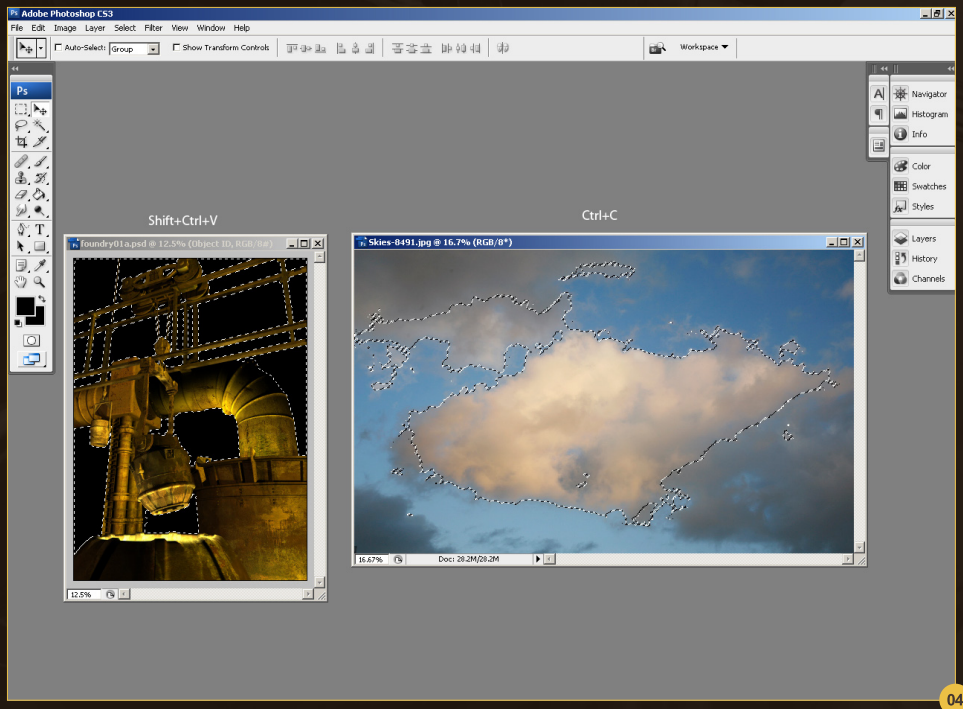
INTRODUCTION

This tutorial is aimed at the 3D artist and is designed to show how Photoshop and the principals of post-production can help enhance a 3D render. The notion behind this tutorial is to demonstrate how certain aspects within a scene can be achieved via a 2D approach and yet still work in harmony with the 3D components. In fact, this method can prove far more economical in terms of time and effort, and can often yield results that are just as effective in the context of a still. During this tutorial we will look at a few ways to add some particle effects that could prove difficult and time-consuming in a 3D environment. We will begin with a base 3D render, which in this case is a foundry, and then discuss the techniques used to add in smoke and molten metal to give the scene a heated atmosphere.


01


02


03



04

Fig.01 shows the base render that was exported from 3ds Max and which incorporates a series of Area Omni lights, focusing the main light source within the foreground container which will house the molten metal.

The background has been left blank as this will comprise of smoke, which will be added in Photoshop. The idea was to render out the crucial components in 3D and deliberately leave out anything that can be done in post-production afterwards, i.e: the molten metal and smoke.

One useful render pass to save out for any kind of post production is an Object ID pass, which you can see in **Fig.02**. This provides a quick and effective way of masking specific sections of the render, which is very useful during any post-production.

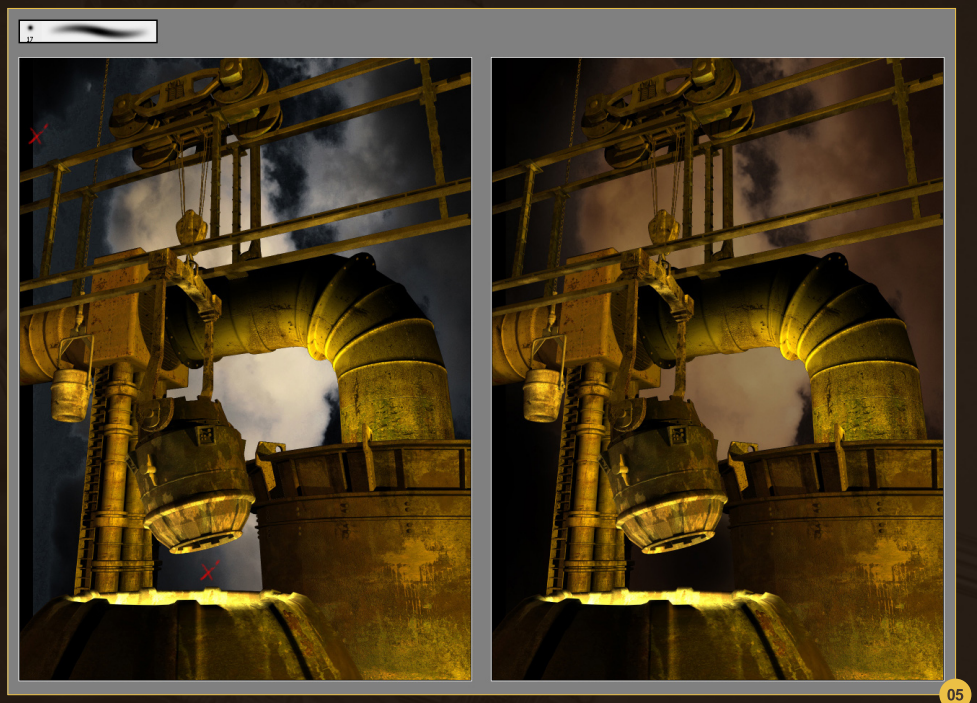
The first step is to add in some background smoke which will help add some sort of context as the objects are currently situated in a void. Using the object ID pass, which is on a separate layer in my PSD file, I went to Select > Color Range and then selected the black background using Fuzziness of 200 (**Fig.03**).

Smoke is a difficult effect to get right in 3D and so being able to do it in Photoshop is a great shortcut, and also enables you to use photographs which guarantee a certain level of realism. Now if you have some good reference photos of smoke then these will prove ideal, but a good substitute that are readily available to photograph yourself are clouds. This is also a heavily documented subject amongst reference libraries and so makes a good starting point. In this case I found a suitable image at 3DTotal's free resource library, which can be found here in the skies section: **http://freetextures.3dtotal.com/preview.php?imi=8491&s=c:Skies&p=0&cid=17**

Using Select > Color Range I selected a large proportion of the main cloud. You can vary the selection area by altering the Fuzziness and by moving the color picker around. Once satisfied it is time to copy the selection (Ctrl + C) and then paste it into the background area of the render. Ensure that the background is selected and then hit Shift + Ctrl + V, which restricts the cloud layer to just the background (**Fig.04**).

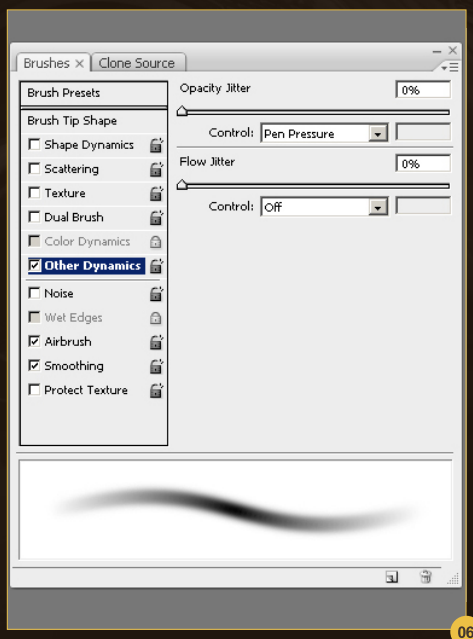
Once it is pasted in it needs some colou correcting by way of Image > Adjustments >

Hue/Saturation and Color Balance. I darkened it slightly and then tinted it towards a warmer color to help blend it in with the lighting (**Fig.05**). Because the selection area grabbed some unwanted areas around the cloud it was necessary to erase these using a soft edged Eraser. The left hand edge running vertically needed to be softened and the sections lower center was also not necessary as this was going to be hidden by the molten metal (see red crosses). You can see the final result in the right-hand image.


05

The brush I used is one of the standard soft round airbrushes, the settings of which can be seen in **Fig.06**.

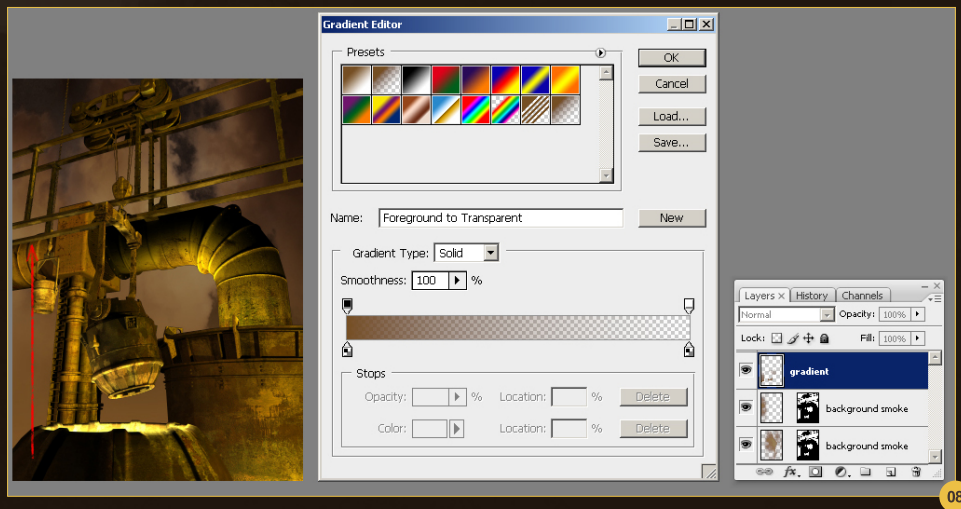
Using this cloud layer, I duplicated it, flipped it horizontally (Edit > Transform > Flip Horizontal) and then moved it to the left-hand side to fill in the void that still existed (**Fig.07**).



06


07

At the moment the smoke in the upper part of the render looks OK, but looks a little too bright towards the bottom half. To help alleviate this we can use a Gradient. I first selected just the background using the object ID layer and then selected the Gradient tool, making sure the preset was Foreground to Transparent. On a new layer I then dragged from roughly the base of the red arrow in **Fig.08** to its tip, using the reddish brown in the editor. The result can be seen in the inset render. This blending mode now needed to be set to Multiply.



08

In **Fig.09** you can see the before (left) and after effects of this gradient in the top two images. I then applied a new gradient set to Multiply, but this time using an olive green (bottom left image). This ensures that the yellow light of the foreground affects the smoke lower down and gradually fades to a more reddish tint towards the top of the frame. The final result of both gradients can be seen in the lower right image.

To help create a warmer light in the upper part of the foreground I added a further gradient

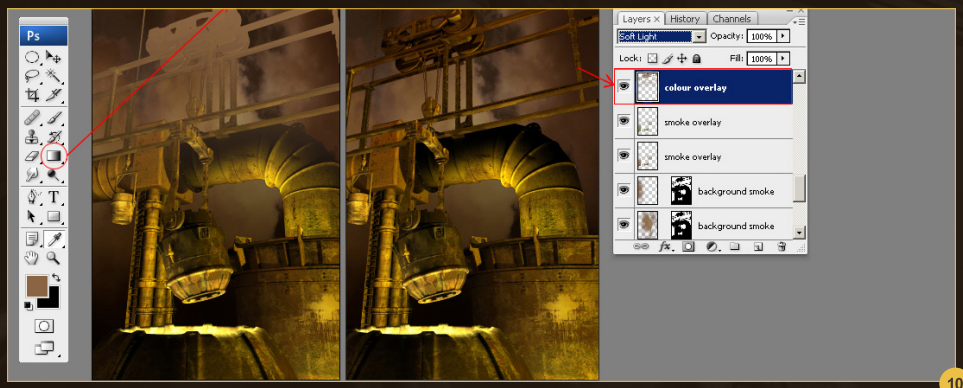


09

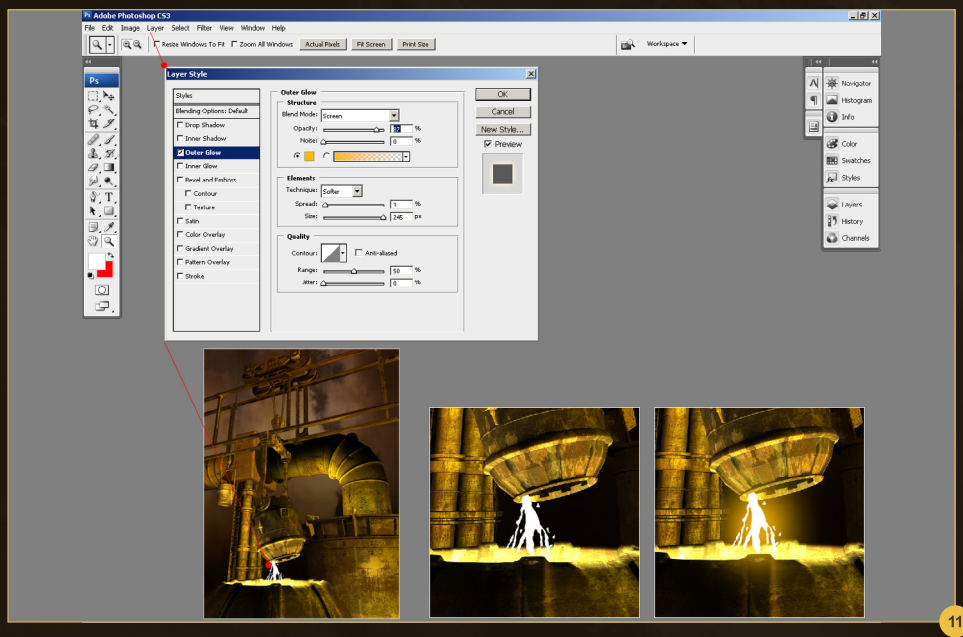
using the color seen in **Fig.10**. I used the objectID layer to isolate the foreground objects and then applied a Foreground to Transparent gradient, starting from the top and dragging down to roughly the lower rail. I then set this to Soft Light, which can be seen on the right.

To create the molten metal I created a new layer and, using a hard round airbrush, painted in some strokes in pure white (**Fig.11**). Once done I applied an Outer Glow (Layer > Layer Style > Outer Glow) using the settings seen in the upper dialog box. The result can be seen in the lower right image. Settings will vary according to the size of your render so experiment.

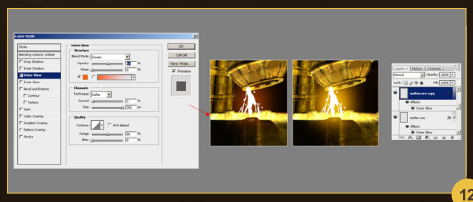
I duplicated this layer and then changed the Outer Glow settings to add another layer, which can be seen in the lower left image (1) in **Fig.12**. You can see the two copies in the layers palette on the right and the combined result in image 2.



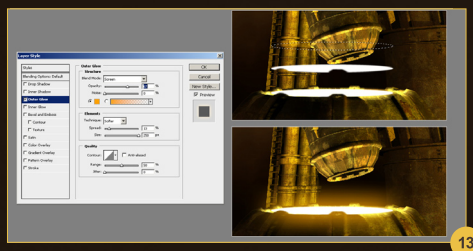
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11



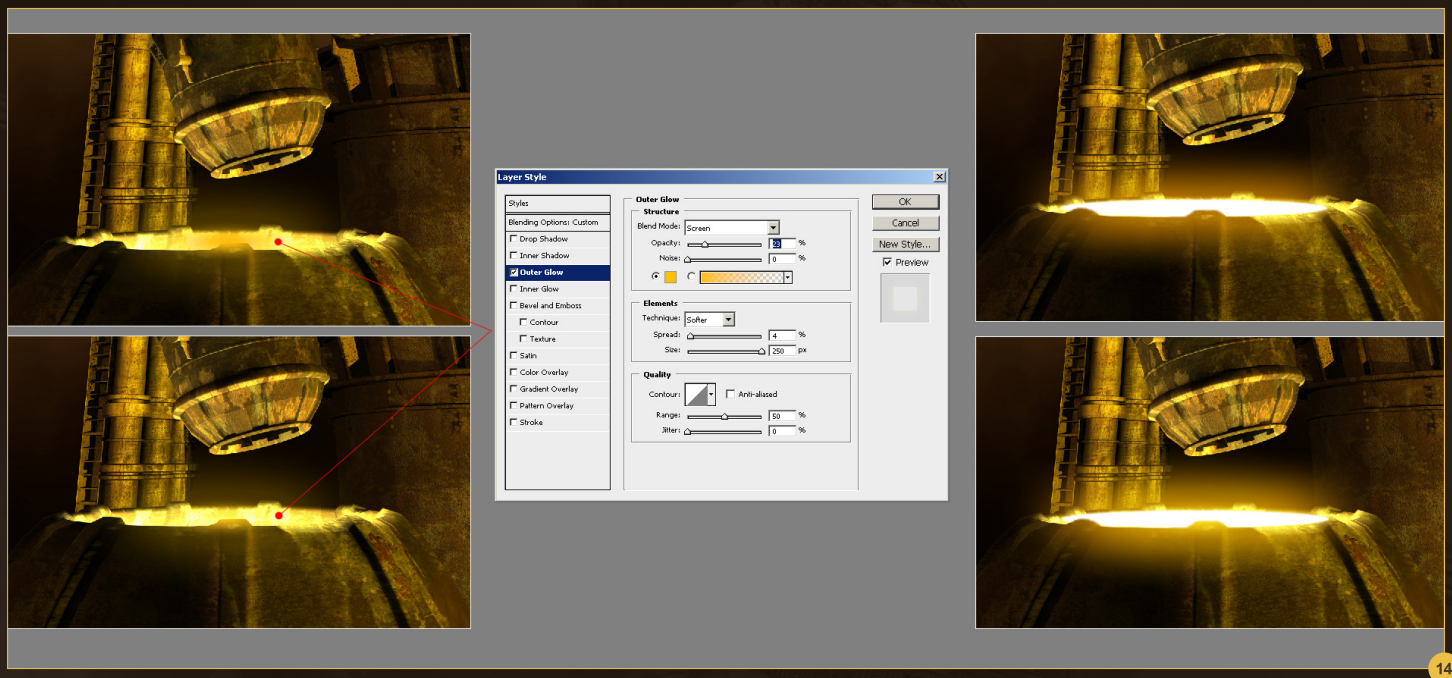
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13

It was now time to start work on the vat of molten metal and create some heat (**Fig.13**). On a new layer I created an elliptical selection area that roughly matched the size and perspective of the vat (1). I then filled this with a pure white and erased around the ribs (2). I then went once again to Layer > Layer Style > Outer Glow and applied the settings seen in dialog box. The final result can be seen in the lower right image.

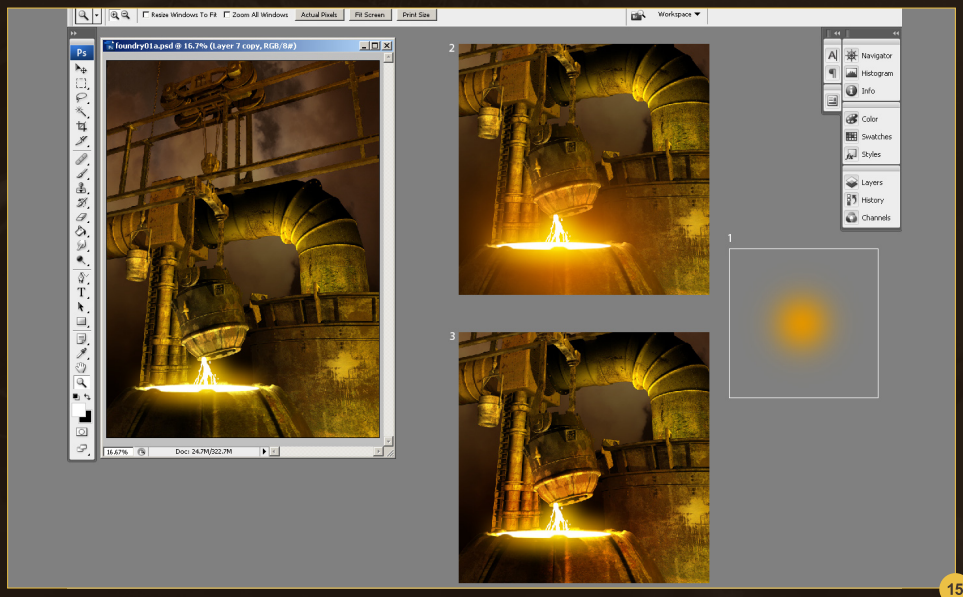
To enhance the sensation of heat emanating from the centre of the vat I added a further layer (**Fig.14**). Using a soft round airbrush I painted in a small elliptical area of yellow using the



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previous method, which I then blurred heavily (Filter > Blur > Gaussian Blur (1)). I applied another Outer Glow using the settings seen in the upper right (2). When both layers are combined they create a more intense glow (4) compared to the initial layer (3).

The glow from the vat required a warmer tint around its origin and so to do this I added a new layer and using a large soft round airbrush, approximately 600 - 800 pixels wide, I clicked once with the mouse at the point where the poured metal enters the vat, using an orange color (**Fig.15**). This looks similar to the small inset seen on the right (1). I then applied some Gaussian Blur to soften the shape and expanded it (2). This layer was then set to Overlay blending mode and eventually appeared as shown in inset 3.



15

As has become the pattern now, I used an additional layer to enhance the effect of this one. I duplicated the layer, but this time reduced the opacity to 68% and set the blending mode to Lighten (the combined effect can be seen in the right image in **Fig.16**).



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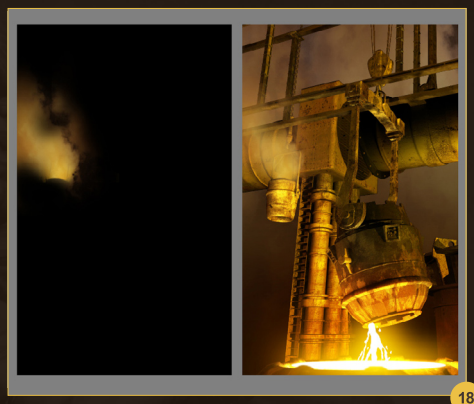
The right-hand edge of the image looks a little disjointed and because there is a smoke filled backdrop there needs to be some form of integration with the foreground. I left this part of the render blank in order to use some foreground smoke, which helped to bind the two spaces.

The image of clouds that I used before was perfectly adequate to be used once again and so using the same technique, I copied and pasted in a portion of the cloud as before.

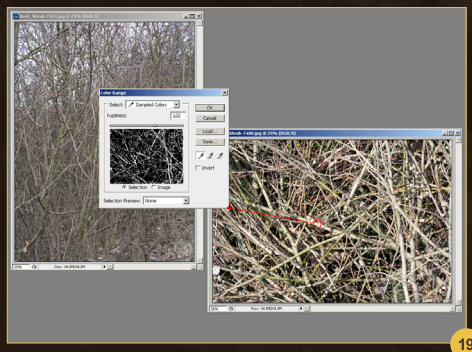
I color corrected it by way of Image > Adjustments > Color Balance, Hue/Saturation and then used a soft edged Eraser to soften the edge. You can see this layer isolated on the left in **Fig.17** and the final effect to the right.


17

I followed exactly the same technique when adding some smoke to the small bucket on the left hand side (**Fig.18**). I copied and pasted a section of the cloud into the image and then scaled it down whilst using the Eraser tool to soften the edges. Once again the isolated smoke can be seen on the left and the final result on the right.


18

One of the final elements I added into the image was some splashes of molten ore. After browsing the free library of photos on 3dTotal I chose two photographs from which to start experimenting. In **Fig.19** you can see two images of branches with different scales. I started by going to Select > Color Range and then picked a random highlight on one of the branches in the right picture and copied this into the image.


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I then locked the transparent pixels layer by clicking on the icon at the top of the layers palette (small chequered square ringed in red) and then started to paint over the branches using a bright yellow. By doing so I was able to confine any painting to the opaque parts of the layer, i.e: the branches (**Fig.20**).



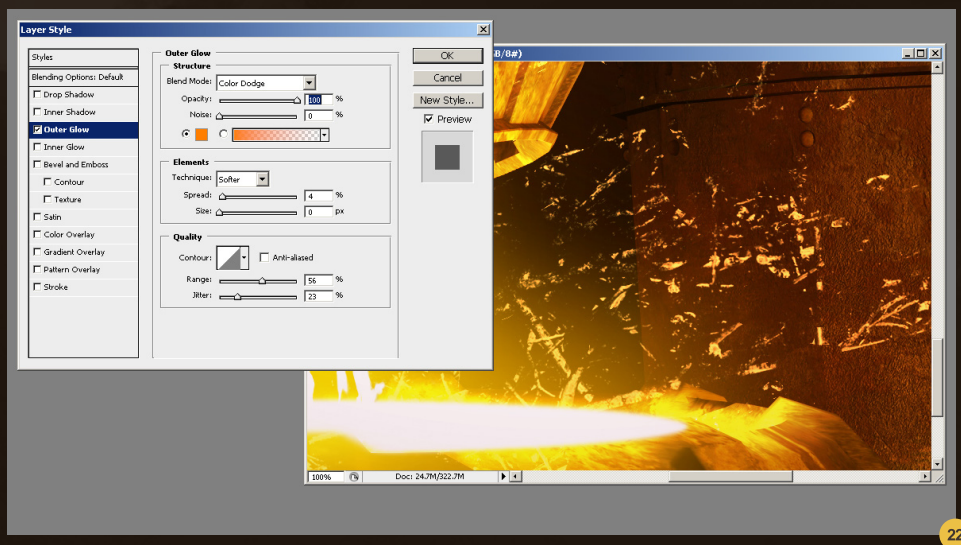
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Once done I scaled it accordingly and then used a hard edged Eraser to randomly delete sections of the branches (1) in order to create some splashes around the top of the vat (2) as seen in **Fig.21**.

I then applied a Layer Style > Outer Glow to the remaining branches using the settings shown (**Fig.22**).

I then repeated the same exercise twice more using slightly different selections from the same photo. These were then scaled and erased so that the general direction of the branches corresponded with the arrows in **Fig.23**. There is no formula to this particular process, rather a careful use of the Transform and Eraser tools in order to give a random look to the splashes.



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Final Touches

Because the background of the initial render was black it needed to be lightened very slightly in order to help situate the smoke more convincingly. Using the objectID layer I selected just the background (black area) and then, on a new layer, filled in with a brown color similar

to the color adjusted smoke and then ramped the opacity down to around 20%. It's only a slight difference, but you can see how the whiter areas are now a little darker in the right-hand image in **Fig.24**.

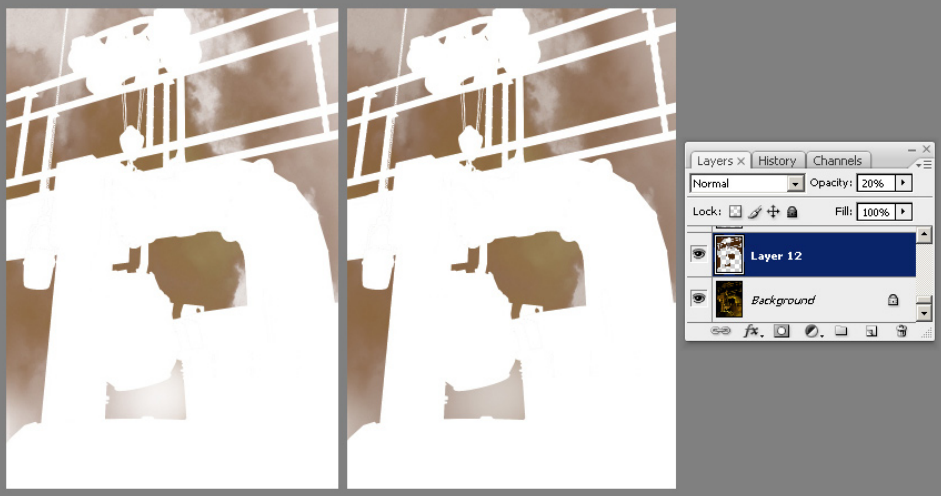
One final touch was to increase the contrast to the highlights in the foreground by way of Curves. This can either be done by applying a new adjustment layer, which generates a mask or alternatively you can duplicate the initial render and then go to Image > Adjustment > Curves and then erase the parts you do not wish altered, which is what I did in this case. Once the Curves dialog box opened I changed the curve by adding two points similar to **Fig.25**.

The temporary white areas (1-2) reveal the parts of the new adjusted layer, which have been erased. The images on the lower right show the before (3) and after version (4) in the final state with the white area deleted. You can see now that the highlights on the large pipe and suspended buckets are now a little more intense (**Fig.26**).

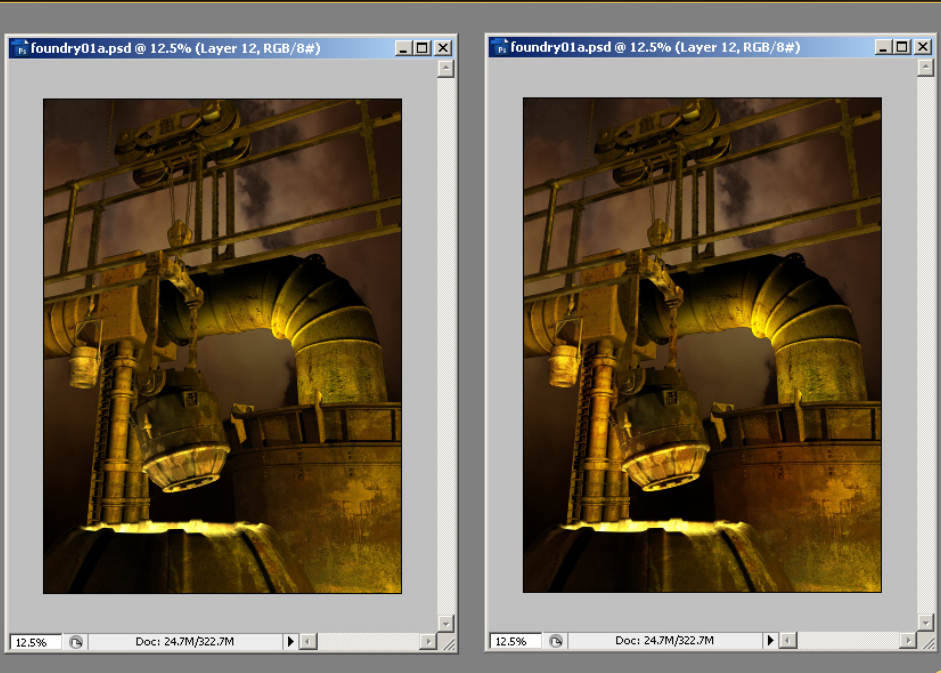
Here is the final version with the all of the post effects (**Fig.27**).



23



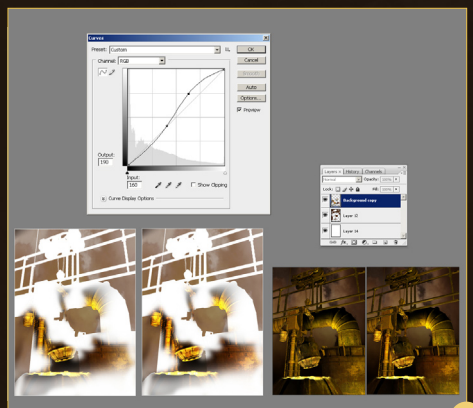
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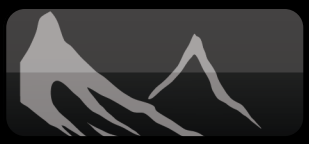
RICHARD TILBURY

For more from this artist visit:
http://www.richardtilburyart.com
Or contact them at:
rich@3dtotal.com



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Vue


Carbon Scatter


Ozone


LumenRT

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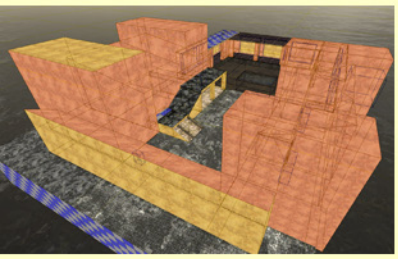
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THE ITALIAN COURTYARD

UNREAL GAMES ENGINE TUTORIAL SERIES











CHAPTER 4 - STATIC MESHES AND TEXTURING PART 2

CHAPTER 1 | NOVEMBER ISSUE 063
Project Planning & Software Explanation

CHAPTER 2 | DECEMBER 064
BSP Creation - Draft lighting

CHAPTER 3 | JANUARY ISSUE 065
Static Meshes and Texturing Part 1

CHAPTER 4 | THIS ISSUE
Static Meshes and Texturing Part 2

CHAPTER 5 | NEXT ISSUE
Layout - A

CHAPTER 6 | APRIL ISSUE 068
Layout - B

CHAPTER 7 | MAY ISSUE 069
Lighting and Post Effects - A

CHAPTER 8 | JUNE ISSUE 070
Lighting and Post Effects - B

The video game industry continues to thrive and grow at an alarming rate, and is swiftly becoming the most obvious option for employment for anyone in the CG industry. This brand new series of tutorials provides an opportunity for anyone trying to get into the business to learn how to create a basic game level portfolio piece that would impress any potential employer. Using the Unreal Development Kit, UK-based artist Andrew Finch talks us through the entire creation process, from downloading the free software and choosing its settings, to importing and texturing accessories. This really is a must have for anyone interested in gaming or game design.

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UNREAL GAMES ENGINE TUTORIAL - CHAPTER 4: STATIC MESHES AND TEXTURING PART 2

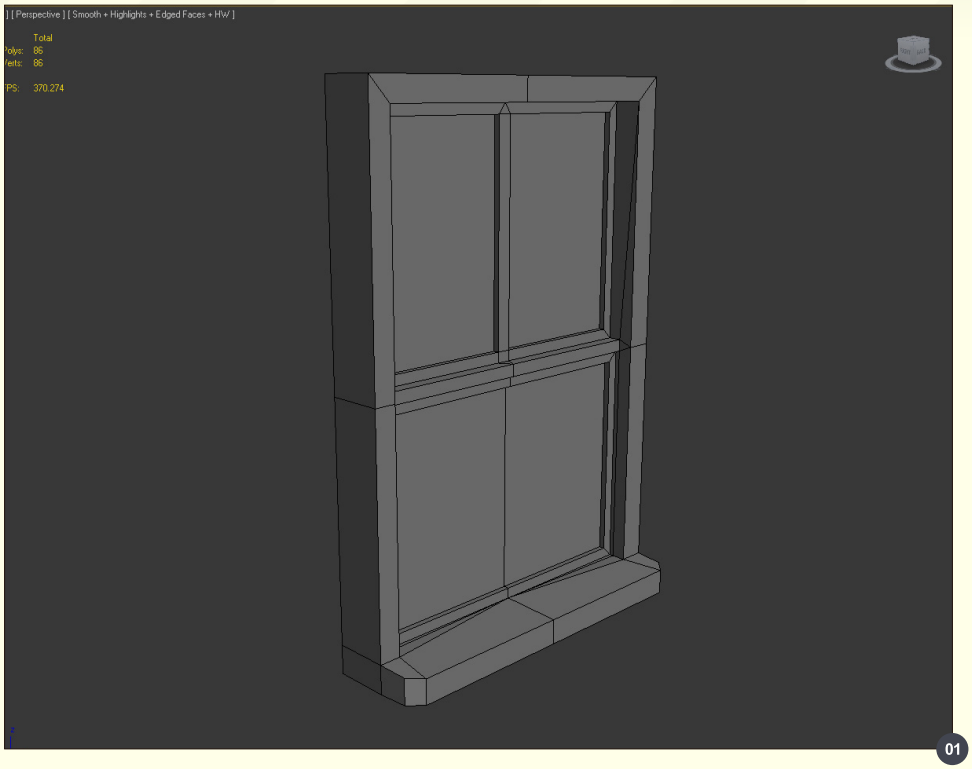
Software used: UDK (Unreal Development Kit)

In this chapter I will show how I created a reflective window asset to put in our level, including the slightly more complicated material setup in UDK. I will then show you the process of creating the tileable textures in Photoshop and how to apply it to the BSP geometry.

I used the same techniques mentioned in the previous chapter to create this window asset and simple extrusions and bevels to create the geometry (**Fig.01**). The textures were also created the same way as the gate asset using Photoshop. Here is the diffuse texture (**Fig.02**). I have included the 3ds Max file and textures with this tutorial.

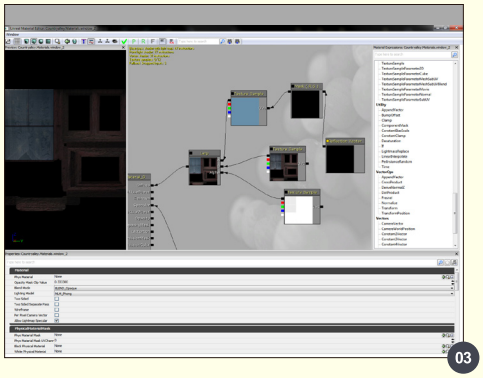
Also in the last chapter we created our folder structure to make sure everything is kept organized. Make sure to maintain this folder structure when you're importing your assets as it will be very useful later on in the project, and will help keep our work flow quick and easy.

To create a reflective material it is really simple. **Fig.03** shows how I created the material for the window. I first placed a Lerp node, which allows us to combine two textures controlled by an alpha texture. To create the reflection I placed a Reflection Vector node and linked it to an RGB Mask node. This is then linked to the UV channel of a Texture Sample node. This node



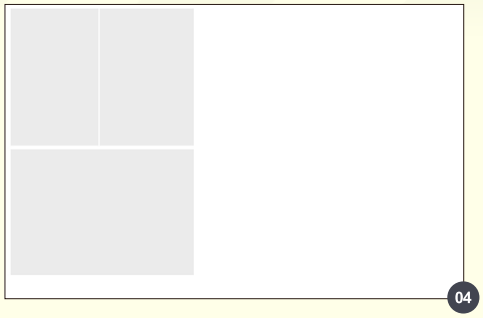
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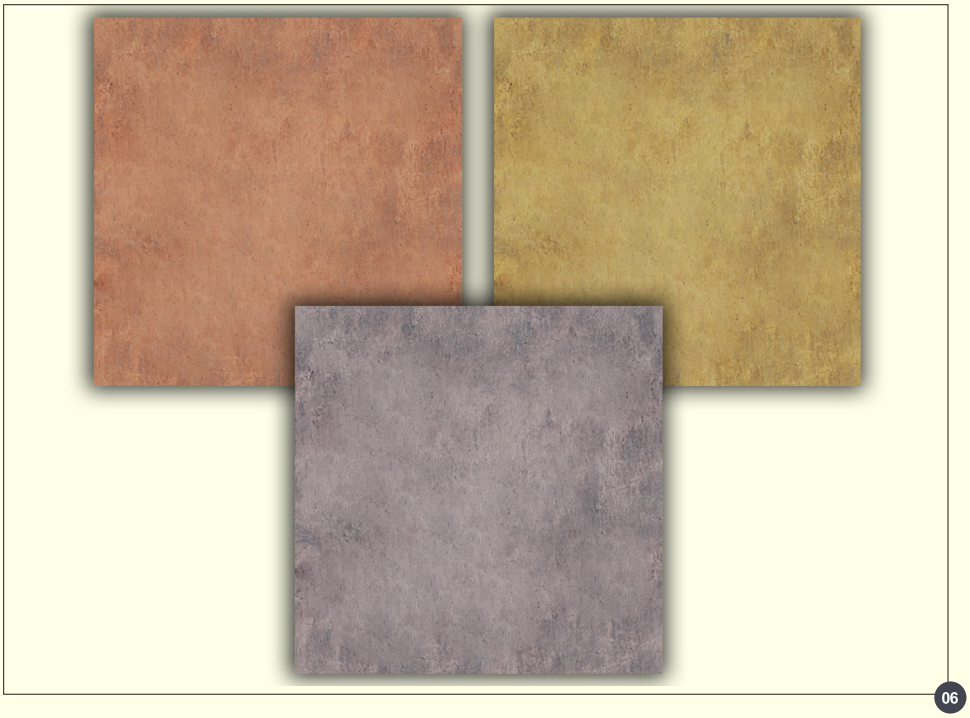

03

is to apply a texture to the reflection so we can see something being reflected in the glass. I added a sky texture to simulate the sky being reflected. I then linked the Texture Sample node to the Lerp node we created earlier. This completes the "A" channel of the Lerp node. The "B" channel is just a Texture Sample node with the diffuse texture applied. The problem now is

that the reflection is applied across the whole model. We don't want this because wood is not reflective. I created a mask texture and added it to a Texture Sample node; this was then linked into the Lerp node's alpha channel (**Fig.04**). The mask texture is a black and white texture. Where it is white the reflection is blocked, and where it is black the reflection is allowed. In my mask the black is a very light gray; this is to reduce the amount of reflection in the windows because we don't want it to be overpowering. I also added the specular and normal maps to the material. You can now apply this material to the mesh and this should complete the window asset (**Fig.05**).


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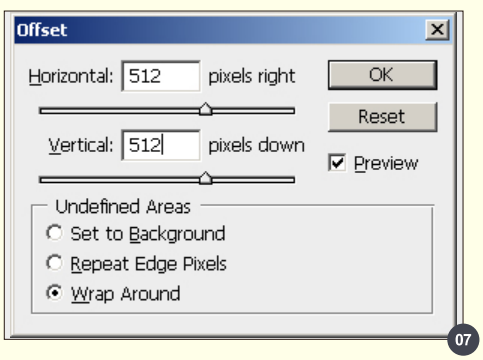

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Tileable Textures

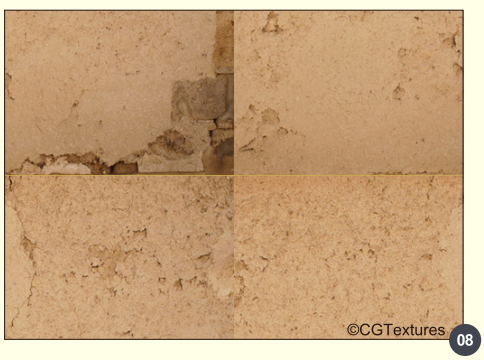
I often use cgtextures.com to source my textures. I also found a few textures that would be suitable for editing to create a single texture by looking at details in photos.

For the Italian courtyard, the colors will be a mixture of reds and yellows. The wall's diffuse texture will not have very much detail in it and this will aid in helping to make it tile correctly when placed on the walls. Most of the detail will be coming from the normal map and the lighting will aid in helping to achieve a convincing wall texture. To create the variety of colors I simply changed the color balance or the hue of the original texture. Here are the three varieties of wall texture used in the game level. I have also included the original textures with this tutorial (**Fig.06**).

To make a texture tileable, Photoshop has a handy filter called Offset. This allows us to move a texture left, right, up and down. So for the wall textures I made the texture to a size of 1024 x 1024. I then duplicated the diffuse layer and applied an Offset filter, which opens up an options box (**Fig.07**). We want the corners of the images to be in the middle of the texture. Moving the texture to the side by half its size would do this, so enter 512 in both the boxes and click OK. In this example image you will now notice a seam down the middle of the texture which can be painted out (**Fig.08**) . You can use a Clone Stamp brush to paint over the seam. Repeat this process of offsetting the texture until you can no longer see any seams and the texture is now fully tileable. I did this same technique for all the wall textures.



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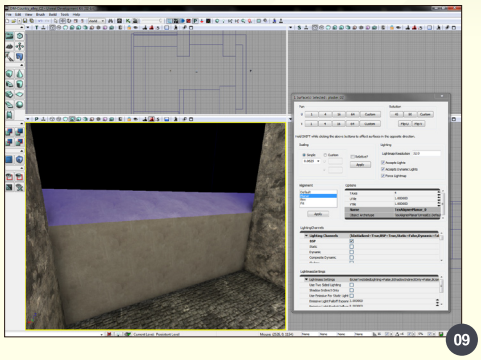
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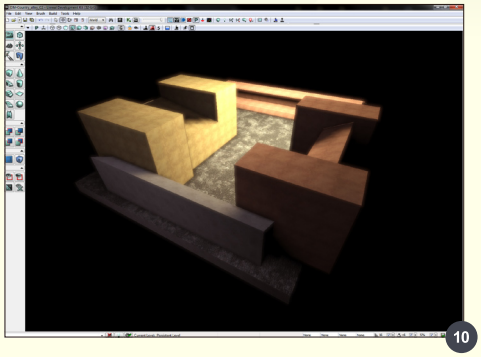
Use the techniques previously described in this tutorial and earlier chapters to import the textures and create their materials in UDK.

Applying the Tileable Textures to the BSP

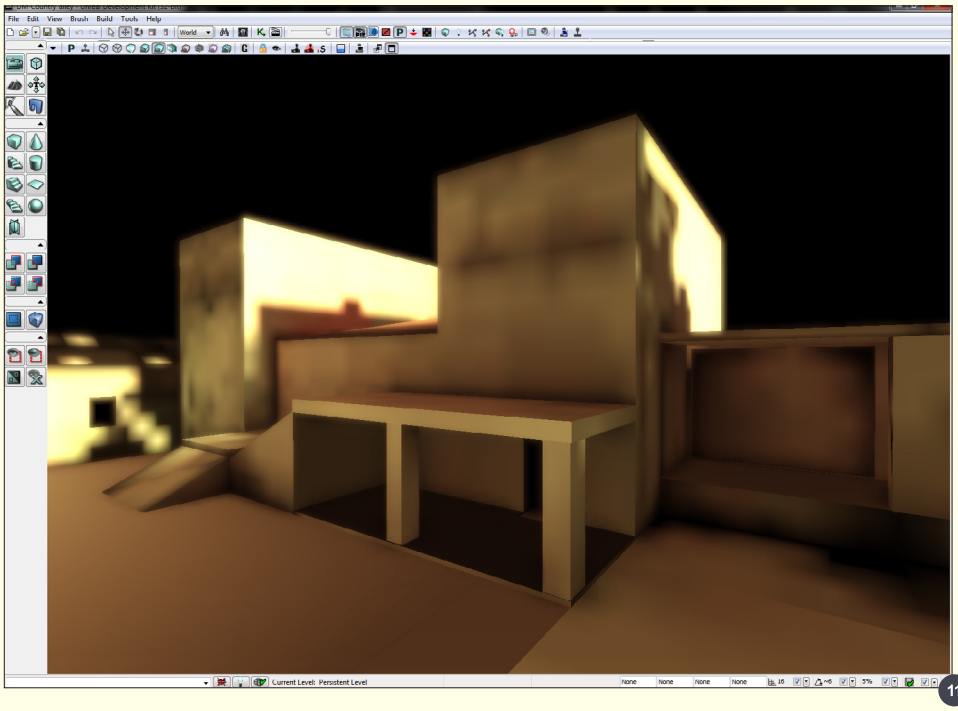
To apply the new materials to the BSP geometry you select the new material in the Content Browser so that it is highlighted. Then by holding Alt and clicking on the poly, the material will be applied to the surface. We need to map the texture correctly across the surface by using surface properties. With the poly still selected, press F4 to bring up the options (**Fig.09**). I changed the alignment to Planar. You can do this on mass by selecting all the polys that

make up the building and clicking “Planar”, then “Apply”. All the settings are applied across the whole building. This should save some time when texturing BSP geometry. If you do this for the whole of the environment you should end up with something like this (**Fig.10**). You will notice some repeating details in the texture which you can go back into Photoshop and fix, but I’m not going to do that on this occasion because the surface will be populated by static objects and will hide a lot of the texture so the repeat won’t be noticeable. I will also show you how to create Decals that project a texture onto the walls to add things like dirt and grime. This also helps hide repeating patterns in the diffuse texture.


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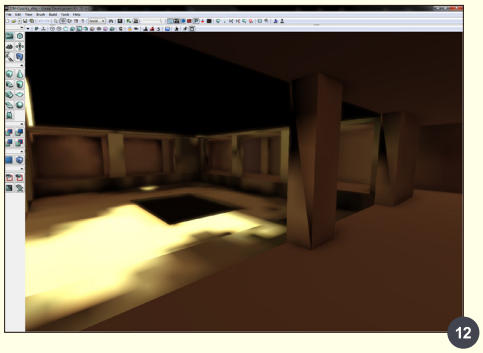
I have made some very quick edits to the BSP geometry to add detail to the environment and make a more interesting level. I wasn’t precise with these edits at this point because we will need to edit the geometry to fit the static meshes when they are imported. You can follow the images provided as a guide or you can look for reference images on the internet to get some ideas on some interesting architecture to put in the buildings. I explained in the previous chapters how to create the BSP, so refer to those tutorials for more information.

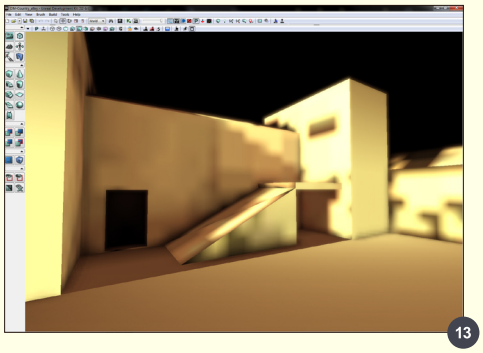

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I added a stair case and a platform that reached halfway up the front of the building (**Fig.11**).

I added some pillars around the edge of the lower platform (**Fig.12**).

I also added a staircase and platform, which also creates a little porch under the stairs (**Fig.13**).


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I created different levels of height in the buildings. This gives the environment some verticality and makes for a more enjoyable level to walk around.

Conclusion

This concludes this part of the series on creating custom assets and bringing them into the UDK engine. Use the techniques I have explained to bring in as many objects as you can think of that will suit the environment. It’s a very easy and simple process to get your assets into game. This is what makes UDK so easy to use and I hope you can now see why it is so popular amongst the game developing community. The next issue covers one of my favorite parts of building a level, layout! I will show you how I find and use static meshes to populate the environment and help bring the level to life. Thanks for reading!

Andrew Finch

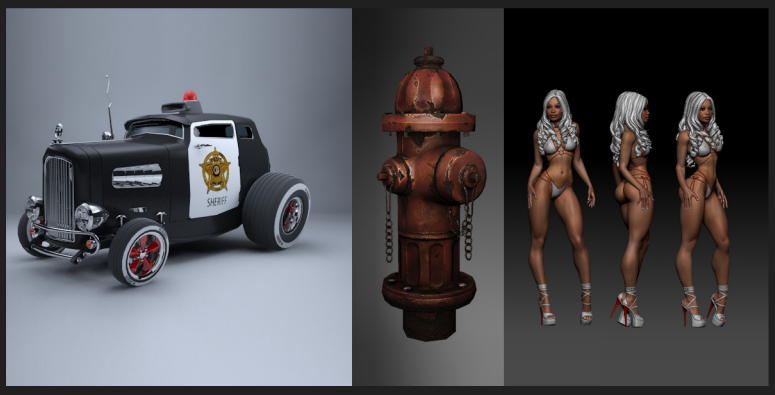
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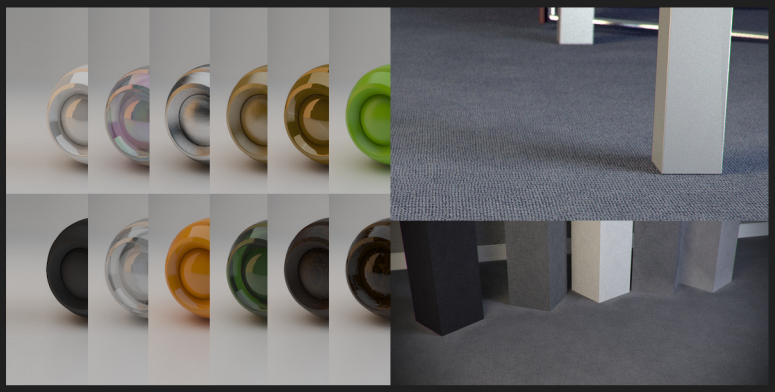
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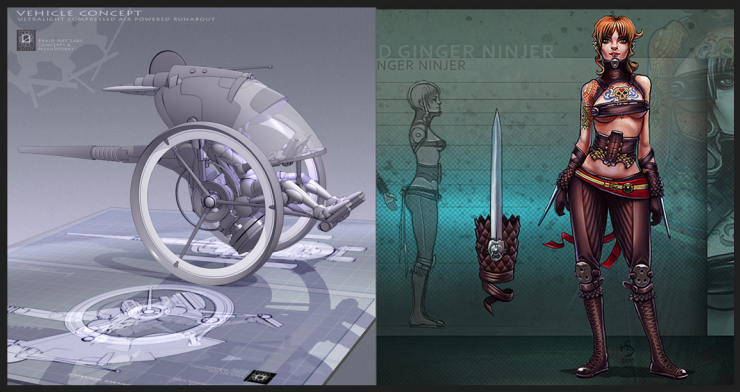
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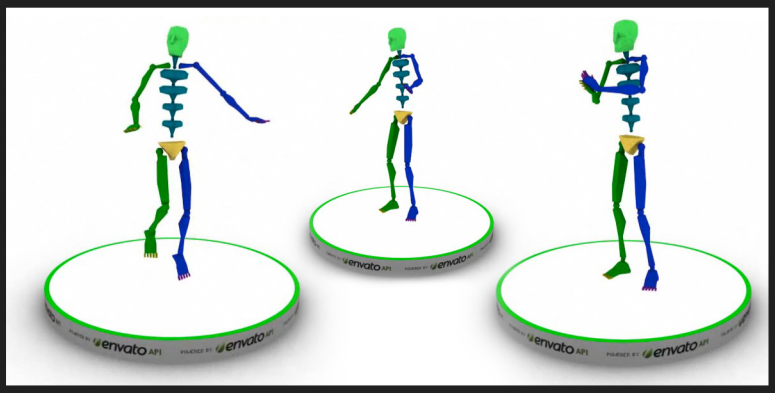
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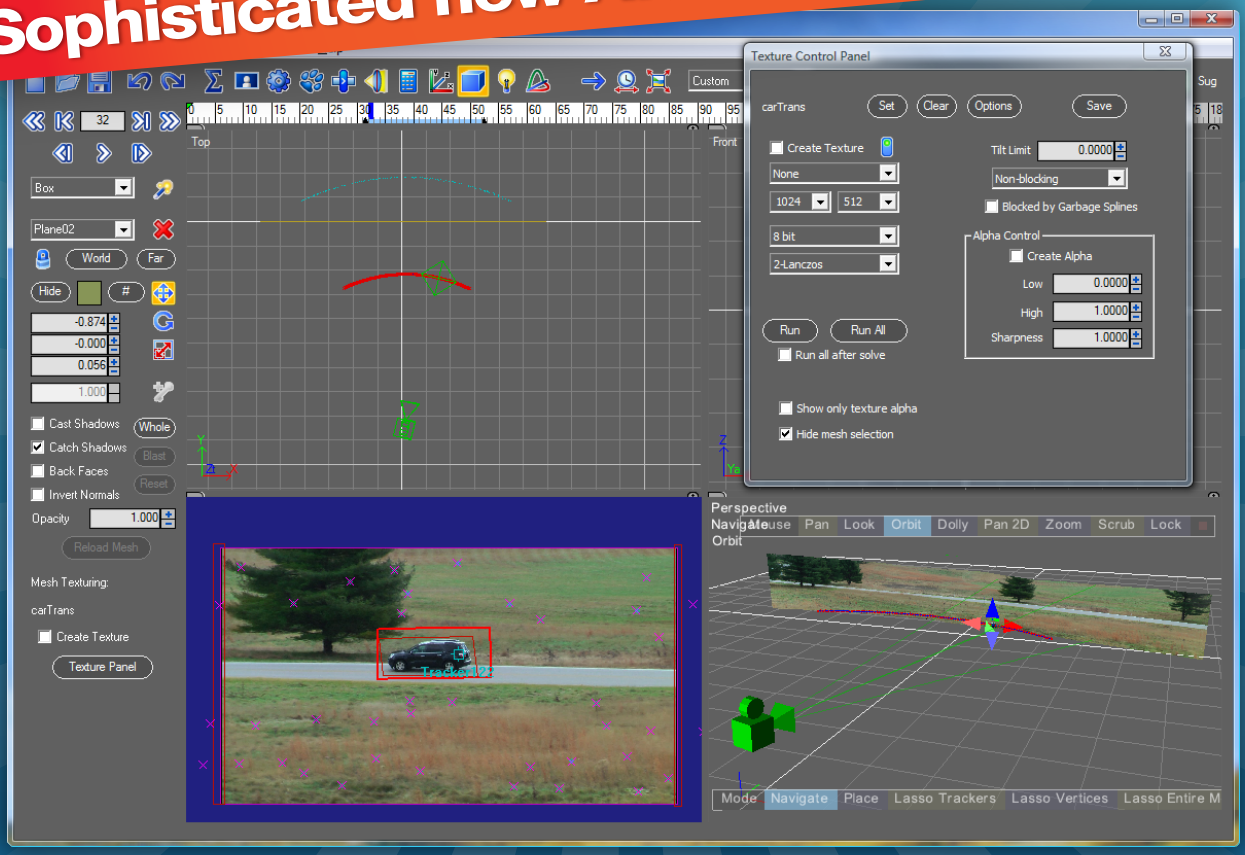
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ZBrush Monster

Character Creation

Chapter 5
Aquatic Monster

ZBrush is becoming more and more powerful in the world of 3D, with many artists now embracing its flexibility and hands-on approach to sculpting characters. ZBrush monsters are slowly starting to dominate the CG forums and galleries across the internet and in this six part series we have invited some ZBrush pros to show us how it's done! Each artist has been given a specific environmental condition as a starting point and has sculpted a monster based on that idea, accompanied by a step-by-step tutorial detailing the creation process from concept through to completion.

Chapter 1 | September Issue 062
Mountain Monster

Chapter 2 | November Issue 063
Sewer Dwelling/Swamp

Chapter 3 | December Issue 64
Subterranean

Chapter 4 | January Issue 65
Volcano

Chapter 5 | This Issue
Aquatic

Chapter 6 | Next Issue
Jungle

Chapter 4 - Aquatic Monster

Software used: ZBrush

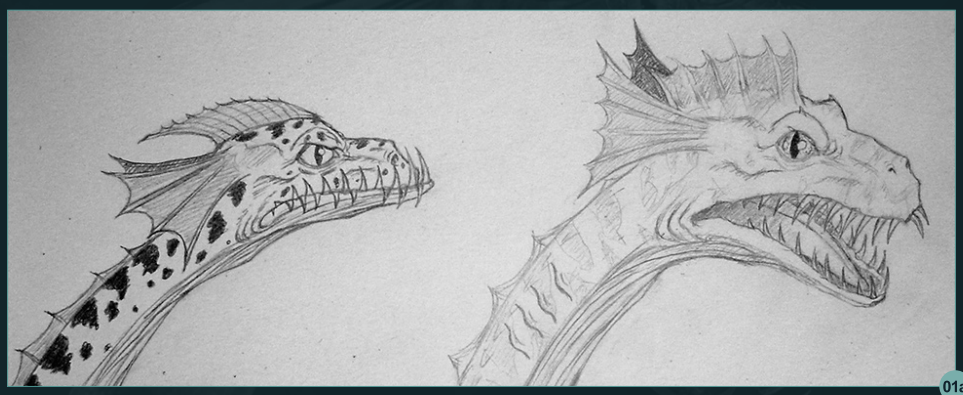
In this tutorial we will examine the subject of sculpting and texturing an aquatic monster, and my workflow from concept to final image.

I always start by getting my ideas down on paper. I draw several quick sketches, create several variations of the character and then choose the one that works best (**Fig.01a – b**).

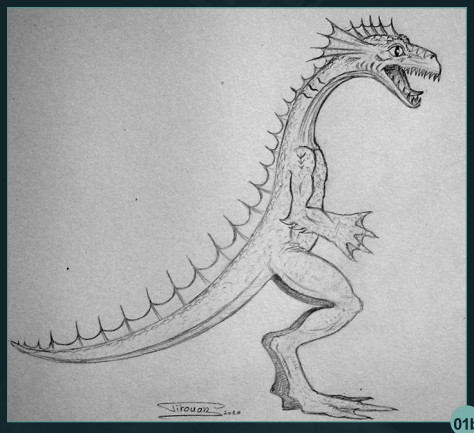
Ask yourself some important questions: Where does your character live? What does he do? And how does his environment impact on his physical appearance? It's also good to work with references; not to copy them, but to make your work more solid and accurate. For this aquatic creature I searched on the internet for as many photos as possible with frogs, fishes and crocodiles in them.

There's no point in spending too much time on the sketches since we'll develop and improve this idea directly in ZBrush, but we'll keep these sketches to help us as we go along. With all the decisions made with regards to the concept, we can now start the sculpting process!

I start in ZBrush using ZSpheres. Go to Tool > ZSphere and draw on the canvas, then enter



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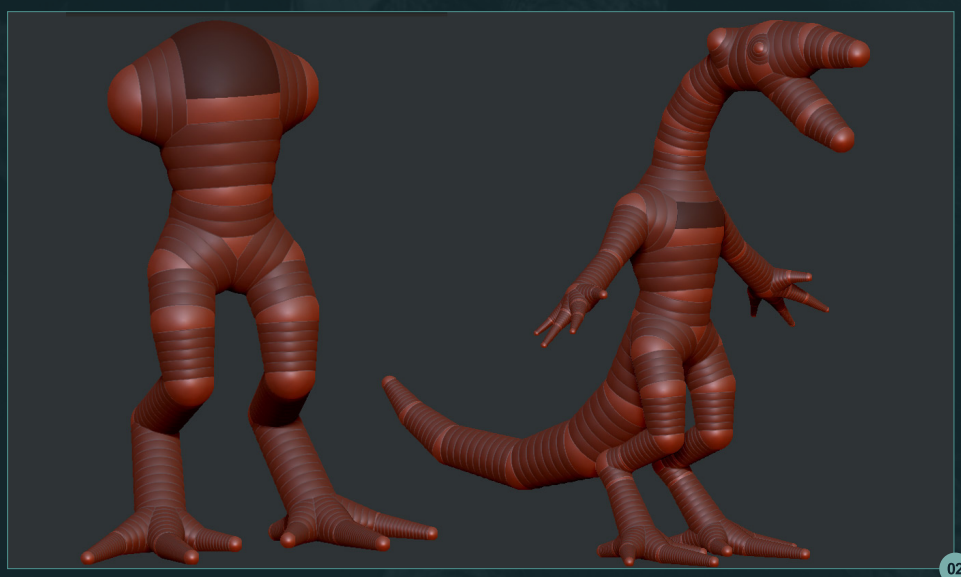
Edit mode. On the keyboard press the "X" key to activate symmetry and draw the head, the body, and the legs. Finally draw the hands and the fingers. Use Transpose > Move to reposition any of the ZSpheres you have created **(Fig.02)**.

You can also use Scale to increase or decrease the size of yours ZSpheres. At any time you can see your mesh by pressing "A" on the keyboard. Press "A" again to switch back to the ZSpheres preview. When you're done, put the density to 1 under adaptive skin (**Fig.03**).

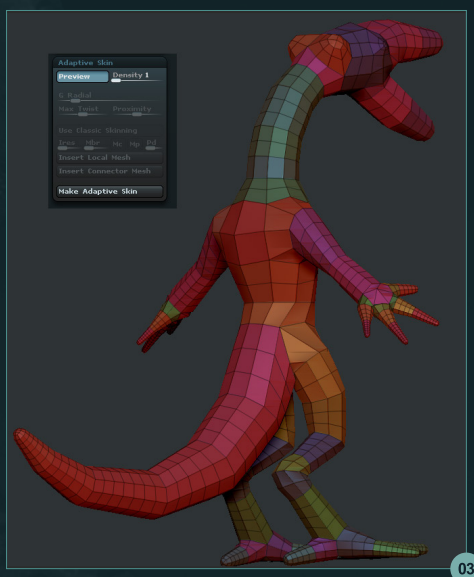
Don't forget to convert your mesh into polygons by pressing "Make polyMesh3D" under the Tool menu. You can activate Polyframe to see the wireframe. As you can see, the wireframe generated by ZBrush is pretty good but not totally clean.

We could start to sculpt directly on this mesh but I prefer to improve and clean up the base mesh in Maya first. That's why I just export the model in Maya and delete the poles (several edges sharing the same vertex) and add some edges loop.

This step only takes a few minutes, but will strongly improve your topology and will help you a lot at the sculpting stage. When I'm happy, I just export the model back to ZBrush. Now let's start in low resolution trying to get the basic shapes. For this, I use the Move tool (**Fig.04**).



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When the silhouette is better we can start subdividing the model.

Tip: Under Render, select “flat” and choose a dark color for your model. It’s really helpful to be able to see a clearer view of the silhouette and spot if something goes wrong with the form.

I use the Standard brush first to refine the shapes further (**Fig.05**).

Getting a solid overall shape and well-balanced proportions is the most important part: you’ll achieve a good model if you work this way. Details can be added later. You can use the Clay or Clay Tubes brushes as well if you prefer, but don’t forget to soften your strokes with the Smooth brush. For the eyes, I just import a simple sphere from ZBrush as a subtool and duplicate it. When I’m happy I start to refine the individual parts of the creature like the hands, feet, head etc., trying to increase the detail on the sculpt (**Fig.06**).


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In some cases I activate Lazy Mouse. It helps a lot when we need to sculpt very smooth lines. To do this press “L” on the keyboard. When I feel I don’t have enough polygons to sculpt correctly I simply divide the model, but it’s sometimes useful to use the Pinch brush instead. You’ll get what you want without having to add another subdivision level. Don’t forget to use references pictures during the sculpting process and to look at your initial sketches.

I’ve also opened up the mouth to be able to sculpt inside it (**Fig.07**).

The teeth and the tongue are made in Maya with a simple extruded cube imported into ZBrush as a subtool. The extruded cube is just duplicated several times to make the teeth (**Fig.08**).

Adding details to a model is a really cool and exciting part of the work, because it can strongly improve your model, but you have to be careful and make sure you spend enough time on this stage.

Once again, looking at some references will be very helpful to keep your model convincing and safe. At this stage it’s also very important to concentrate on very specific point of the model; that’s why it’s useful to hide some parts to keep your attention on the areas you’re working on. Using alphas is a good way to add details



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without spending too much time, but use them sparingly to avoid ruining all the work you've done so far (**Fig.09**).

I use polypaint to add colors to my character. Take care when choosing the material you're using before you paint because some materials are already coloured in ZBrush and are not adapted for this stage. Try to choose a neutral material like "SkinShaded4", for example. I start with a blue on the whole model and paint some white on the belly using the Standard brush. I then use a darker blue to create the stripes and use several tones of cyan, purple and blue on the different parts of the model. I finish by adding some smaller and subtle details **(Fig.10 – 11)**.



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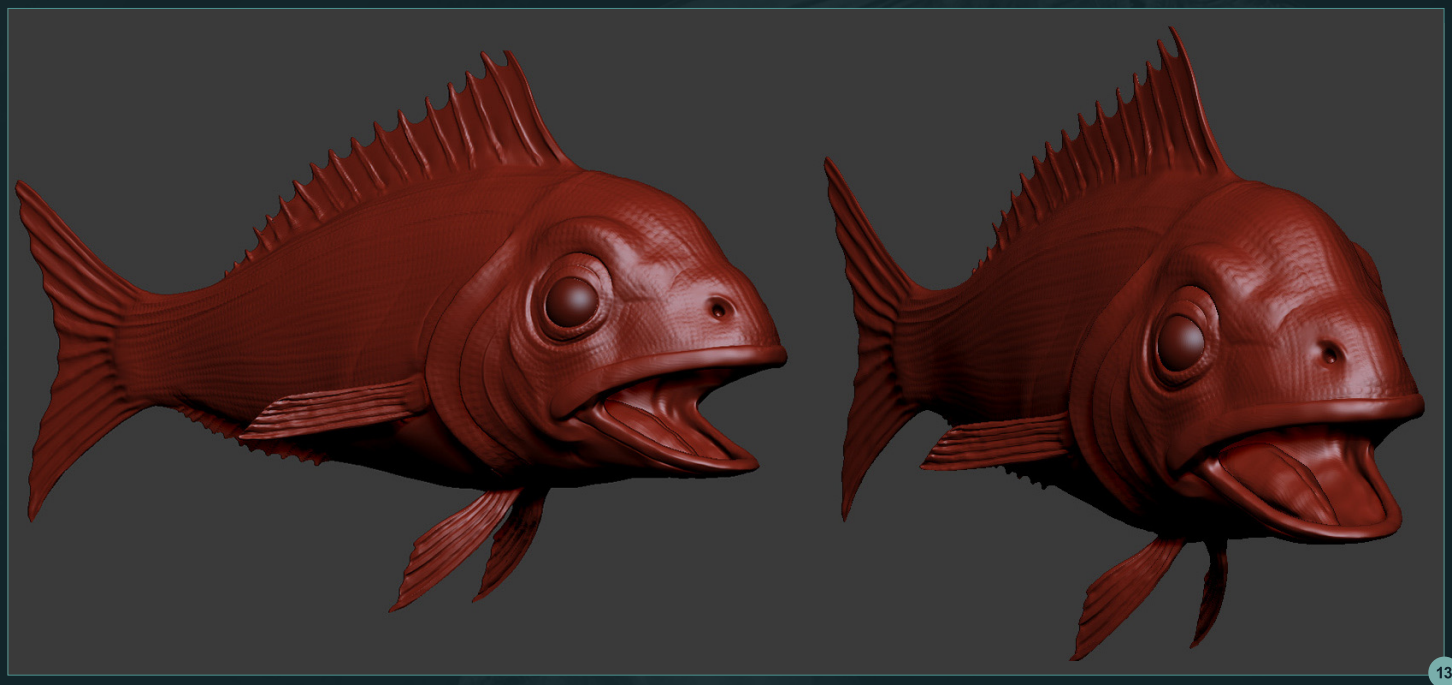
You can also use a cavity mask (Tool palette > Masking Tab) so that you can paint only the cavities on your mesh. If you want to inverse your mask you just have to hold Ctrl and click on the canvas.

When you've finished you can unmask your model by holding Ctrl and dragging and clicking on the canvas.

For the fish, I use the same workflow, except the fact that I make the base mesh directly in Maya. I then import it into ZBrush and sculpt the same way I did for the creature, focusing on the main shape first and then detailing at the end (**Fig.12**).

I don't spend too much time on the fish though, since we won't focus all our attention on it and because it will be only a small part of the image (**Fig.13**).


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I use polypainting for the colors too. As ever, reference material is important. When the model is finished, I importe it with the creature as a subtool (**Fig.14**).

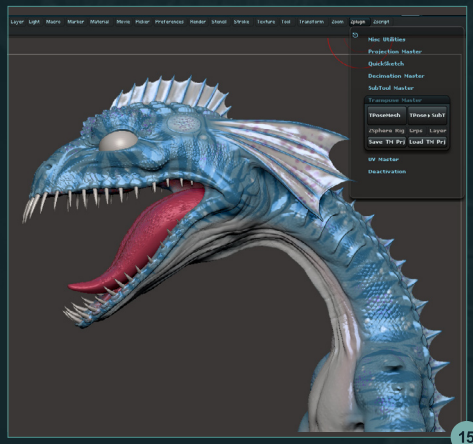


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Now it's time to pose the character. For this I use Transpose Master (Zplugin > Transpose Master > Tpose Mesh) **(Fig.15).**

This plugin gives us the opportunity to move the parts of the model we want with all the subtools. This way, we can move the head with the tongue and the teeth together for example.

Here, I try to give some dynamism to the character. When it's done, I go to Zplugin > Transpose Master > Tpose SubT, and I reshape the areas that have been deformed during the



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posing process. I then add some more details and break the symmetry **(Fig.16)**.

I add the final touches by painting the finer details on.

At this point, I chose to export my model into Maya and to make the render there, but you can choose to render your model with ZBrush if you like. Set some good lighting up and tweak your shaders. You can even render several passes and composite them in Photoshop... but this is totally up to you! In **Fig.17 – Fig.18** you can see some render tests and the final image in **Fig.19**.

I hope you've enjoyed this tutorial and learned some useful things. Thanks for reading!



17

Olive Titouan

For more from this artist visit:
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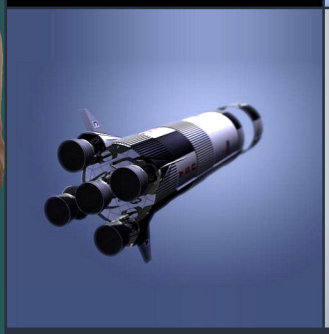


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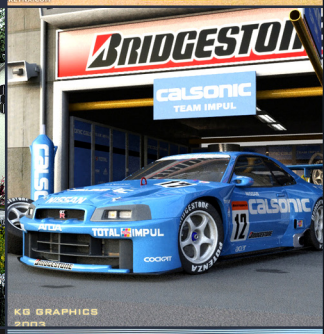



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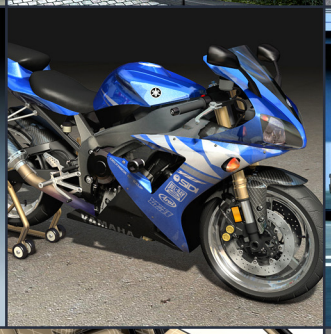
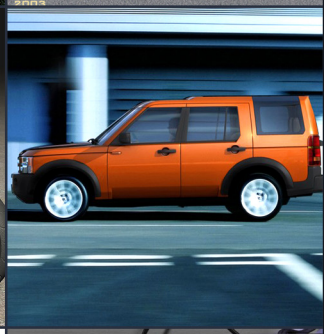
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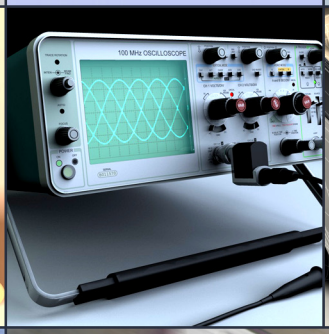




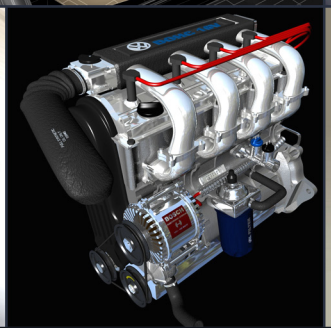










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"I wanted to test my textures in real-time, not only with the diffuse but with the normals as well, so I decided to use DirectX shaders"



THE AH-1Z VIPER HELICOPTER

Martin Kostov is this month's Making Of artist and tells us a little about how he teamed up with Ivo Jovchev to create his AH-1Z Viper Helicopter. Martin takes us through his whole creation process, from gathering references to building the model, and goes into specific details when it comes to texturing.

THE AH – 1Z VIPER HELICOPTER

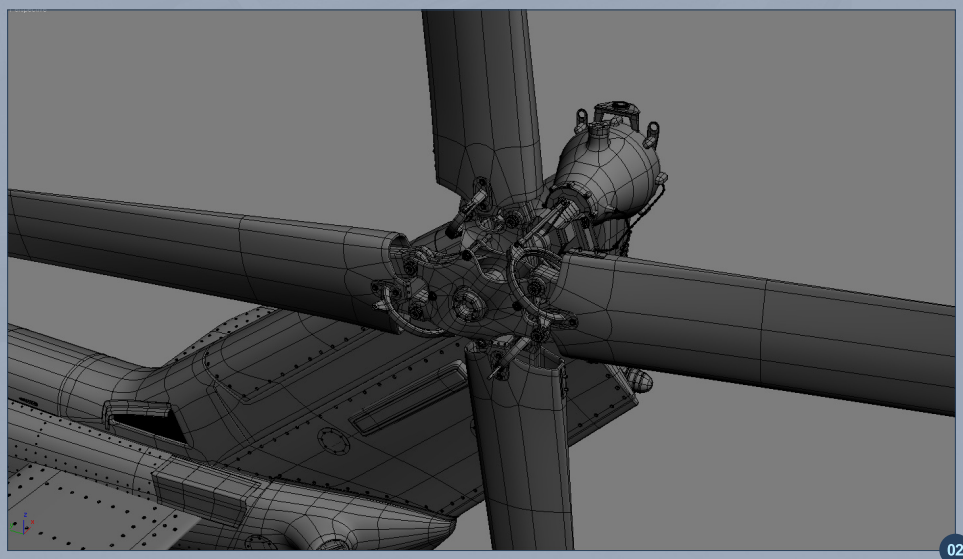
Software used: 3ds Max 2008, Photoshop

INTRODUCTION

Hello everybody, my name is Martin Kostov and in this article I will have the honor of explaining the creation of my image “AH-1Z Viper Helicopter”. First of all, I want to start by telling you that I did not work alone on this project. The high poly modeling was done by my friend and colleague Ivo Jovchev. We wanted to create a good piece of art and at the same time wanted to keep the polycount as low as possible. The first step we took was to look for references. We were lucky and found a lot of high quality photos on the internet. I cannot stress enough how important it is to have good references.



01



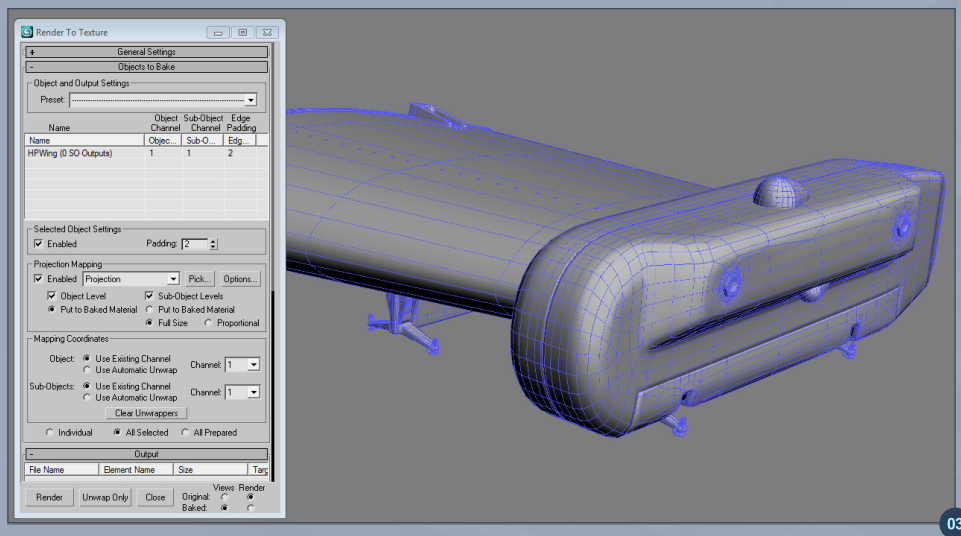
02

MODELING

The next important step was to find information about the helicopter. Such information can usually be found on Wikipedia and similar sites. You can always make the model without knowing anything about it, but this model was very complex with a lot of different elements and we wanted to get to know the different parts so that we could create them more easily.

After we gathered all of this data we sat down and decided that in order to keep the detail, but end up with a low poly count, we had to make a very high poly version of the model first, then create the final mesh and bake all of the small stuff (like bolts and small holes). Ivo was going to create the high poly version and I would do the rest. He sat down for two-three weeks and created a really detailed high poly model with around 9 million polygons (**Fig.01 – 02**).

After I received the model I started making the final mesh. I used the high poly version that he had created and started going through all of the pieces one by one, making the final meshes. I grouped and fixed elements that needed adjustment before the baking.



03

BAKING

After all of the modeling was done and I had a final mesh, I started baking the parts. I could have just drawn the bolts and holes in Photoshop, but after a few tests I decided that it didn’t look as good as if it had been baked from the high poly model.

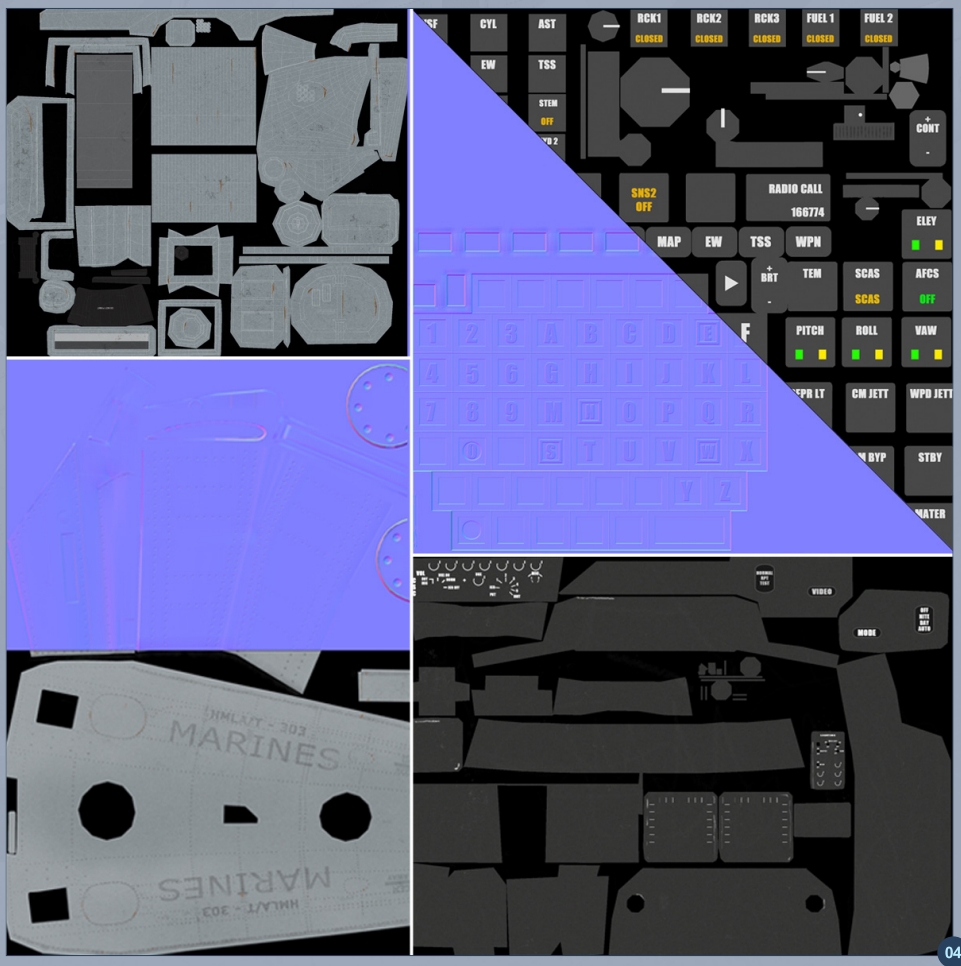
Of course the baking didn’t go by without a few mistakes, but they were all fixed either in the baking stage or in Photoshop (**Fig.03**).

TEXTURING

After the baking was done the next step was for me to create all the textures. This included creating diffuse, glossy and specular maps as well as a few opacity maps. I used the normal maps that I had already created and also exported UVW templates into 3ds Max.

I wanted to test my textures in real-time not only with the diffuse but with the normals as well, so I decided to use DirectX shaders just for the time being. You can only use those shaders if you run DirectX as your default driver in 3ds Max (**Fig.04**).

I used a Wacom Bamboo tablet for the drawing of the textures. I don't think that good results can be achieved when drawing with a mouse. Even a small tablet like the bamboo works miracles for your end result. I wanted to add some dirt, scratches and also a little bit of rust around the helicopter. Military helicopters go through maintenance before every flight so they only have small scratches and rust spots on them. Anything to0 drastic would not look realistic (**Fig.05**).



04

MATERIALS

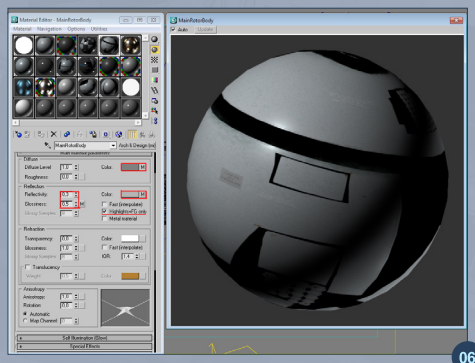
I wanted to render the final images with mental ray, so I had to create mental ray materials. I used Arch/Design materials and basically used some pretty standard settings: Reflectivity – 0.3, Glossiness – 0.5 and Highlights + FG checked (**Fig.06**).



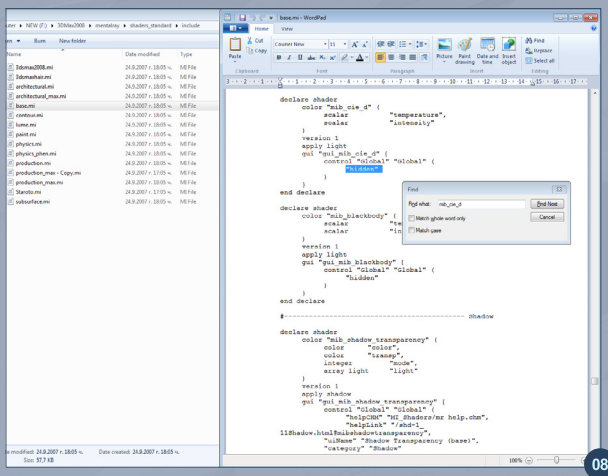
05

LIGHTING

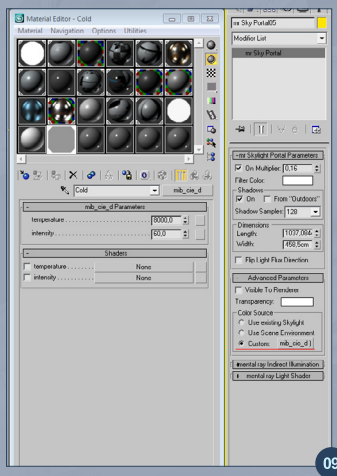
I used "mr Sky Portal" lights, because they render really fast and at the same time provide a very clean and nice result. Also they give you a very soft light which was my goal from the beginning. I used a little trick for these lights. I used the "mib_cie_d" map, which is only available if you unhide it in the 3ds Max/mental ray folder. Just go to "3DMax2008\mentalray\shaders_standard\include" and open the "base.mi" file in Notepad or some other text editing


06

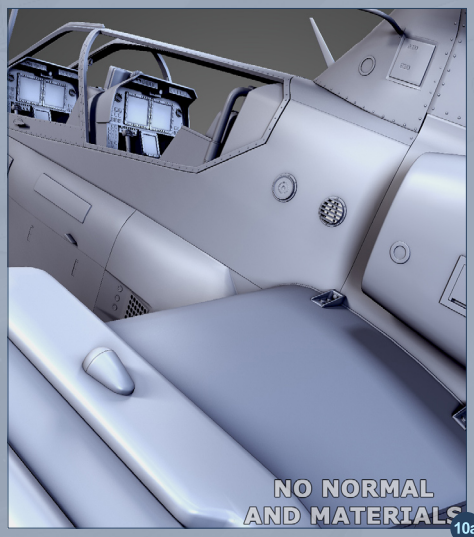

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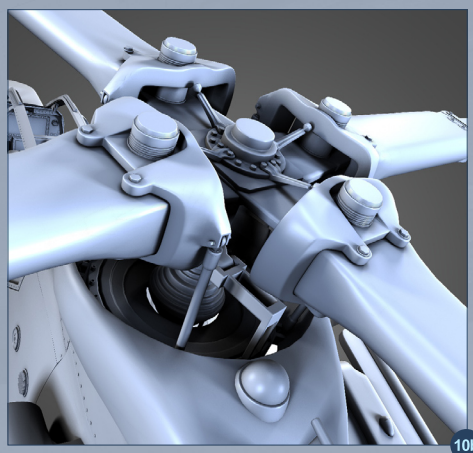
09



10a

software. Once you open it do a search for "mib_cie_d". Once you find it you have to scroll down and place a # sign in front of the word hidden. This will eliminate this command and the map will be visible in 3ds Max. Just restart the program and you will find it there.

I used some middle values for this map since it is working with temperature. You have to note that higher values create a red color and lower values create a blue color. So if you type in something like 6-7000 you will get somewhere in the middle, which is white. I placed four lights around the model and one at the top with a lower value for the intensity (**Fig.07 – 09**).


10b



10c

Rendering

The rendering setup wasn't anything special. I rendered with mental ray and set the Aliasing values to 4 for minimum and 16 for the maximum.

I also changed the Filter Type to "Lanczos". The last thing I did for the rendering was to render out an AO pass for the post-production in the end. I recommend using an AO pass since it can add a lot of depth to your end result. I wondered if I should render a Z-Depth as well, but decided that for this scene setup it was not necessary.


10d

Post-production

For this final step I used Photoshop CS5. There wasn't much to do for the post-production. All I really did was sharpen the image a bit and add a bit more depth with the AO pass, as well as making the reflections more visible.

Also I changed the background and added a border and my logo (**Fig.10a – c**).

Thank you all for reading this and also thanks to the *3DCreative* team for showing an interest in our work. I hope you enjoyed reading this article and that it helped you in some small way. Bye!

Martin Kostov

Contact them at:
tornadooo2@yahoo.com

Digital Art Masters Volume 5



With the release of 3DTotal's book, *Digital Art Masters: Volume 5*, we have some exclusive chapters for you...

This is more than just an artwork book. Not only does it feature full-color, full-page images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

"Mouse Love"

by Jose Alves da Silva



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The following shots of the “Mouse Love” book pages are featured here in full-resolution and can be read by zooming in...



Mouse Love

By Jose Alves da Silva
Job Title: Freelance Artist
Software Used: 3ds Max, V-Ray, ZBrush, Photoshop



Introduction

This image was created for the XXIV CGSociety Challenge under the theme “Secret Agent”. It was my first time participating and my main goal was to test my skills and hope to get some advice from the “gurus”. There were a lot of sleepless nights but the enthusiasm of my fellow challengers really boosted my adrenaline levels and kept me going. I really have to thank them for that!

The image had to accomplish two goals: it needed to scream “secret agent” as well as tell a great story. I therefore started on the quest for a good story...


Fig.01a


Fig.01b

> As a paradox I also included a ridiculous mask on his head, thus undoing his cover as a “secret” agent

The Story – Part I

I wanted to come up with something original, but also something that referred to a lot of preconceived ideas, so I collected a bunch of images of the most famous agents to use as references.

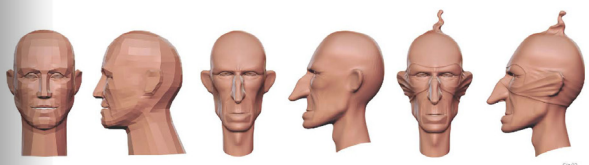
A highly clichéd situation in a secret agent film would be facing the threat of a world-dominating menace. I thought it would be great if I could take these stereotypical elements and give them a humorous twist. I wanted a serious yet ridiculous agent; the antihero type.

The Agent Character – Part I

I started sketching the character and came up with a middle-aged secret agent based on certain clichés: stylish suit, dark glasses and a straight pose. As a paradox I also included a ridiculous mask on his head, thus undoing his cover as a “secret” agent (**Fig.01a – b**).

The Agent Character – ZBrush

I created an anatomically correct low polygon face and


Fig.02

experimented with the proportions of the facial features. As participating in this challenge was all about having fun, I got carried away and started detailing the face way too soon and sculpted the mask on the same mesh as the head. The head topology was not adjusted to the mask so I had problems when I had to separate the face from the mask (**Fig.02**).

Then I started to work on the body in 3ds Max. I only created the parts of his body/suit that defined his silhouette: coat, shirt collar, trousers, hands and shoes. When I was satisfied with his overall proportions, I exported the body into ZBrush in order to pose it. The mesh was divided into different subtools and polygroups to select/isolate body parts easily. Using the Transpose tool I then posed the model, which is much faster than having to rig the model (**Fig.03**).


Fig.03



Fig.04

The Story – Part II

I thought it would be comic if the antagonist of our highly trained agent was an apparently harmless small creature – a mouse. The little rodents are known for their reproductive ability. Why not turn it into a funny way to conquer the planet?

The story could get better if things were not so black and white. Mice have been victims of human exploitation through animal research. What if those mice were freeing themselves from captivity and just trying to get their destiny back in their hands? That gave me a place to set the action – The National Laboratory for Animal Research (**Fig.04**).

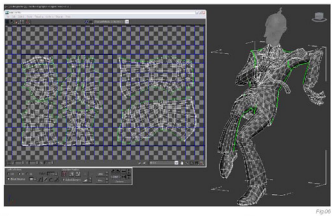
The Scene

3ds Max has the ability to preview shadows and screen space occlusion in real time. This allowed me to study the composition, lighting and shadow placement without rendering. I modeled some basic meshes representing a mouse, a flashlight and boxes as placeholders for props.

I ended up with a composition following the traditional “thirds rule” in which two elements stand out: the agent

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and the world domination plan. I tried to illuminate these areas and create some contrast (**Fig.05**).

Regarding color, there are two distinct areas: a saturated red office area reinforcing the evilness of the mice's plans and a dark blue area outside the office, emphasizing the undercover role of the agent, broken by the revealing light of the flashlight.

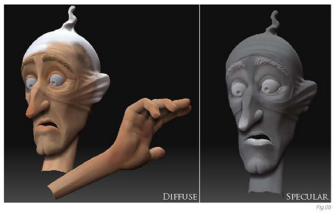
The Agent Character – Part II

In 3ds Max I added more edge loops to the mesh to prepare for the sculpting of folds across the suit and created the UVs while the polygon count was still low and easier to tweak (**Fig.06**).

In ZBrush I worked on the facial expression and detail of the clothes, trying to sculpt radiating lines emanating from

> "My approach to lighting was totally unrealistic as I didn't need the lights to behave in a physically correct manner. They were simply used as a vehicle to draw attention to the focal points in the composition"





the tension zones and adding volume and wrinkles to the relaxed areas (**Fig.07**).

The hands and head were polypainted inside ZBrush and the vertex colors were converted into a texture. The specular map was also painted inside ZBrush (**Fig.08**).

Using the Decimation Master plugin, the polygon count was reduced while preserving the surface detail and UVs. The model was reduced from 3.2 million polygons to 150 000, without any apparent loss of detail (**Fig.09**).

Lighting & Materials

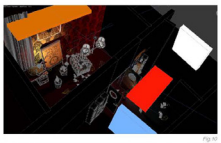
My approach to lighting was totally unrealistic as I didn't need the lights to behave in a physically correct manner. They were simply used as a vehicle to draw attention to the focal points in the composition. Inclusions and exclusions kept the lights from affecting objects that would distract from this goal. Certain lights didn't cast shadows or affect Global Illumination, which was the case with the characters' rim lights.

The same unrealistic approach was used for reflections. Huge light boxes with self-illuminated materials that did not generate light were positioned to produce nice colored reflections in specific parts of the image (**Fig.10**).

The Mice

To create the crowd of mice, I modeled a single, low-polygon mouse. In ZBrush I sculpted the flow of the fur as I knew I wouldn't have time to render it in 3D. To achieve some variation amongst the crowd, I defined five poses that were rotated, scaled and mirrored, as well as creating different tails. Luckily, all white laboratory mice are very similar to one another and so were able to share the same materials (**Fig.11**).





The mice assumed different appearances in the scene. In the red, office they looked white and cute and in the corridor they looked dark, with red, glowing eyes suggesting an aura of evilness. This was important as they could be seen as either aggressors or victims.

Post-production

I used four render passes in all: main render, rim lights, occlusion and masks (**Fig.12**).

In Photoshop, I placed the rim lights layer on top of the main render and set the blending mode to Linear Dodge to combine both layers. I set the occlusion pass to



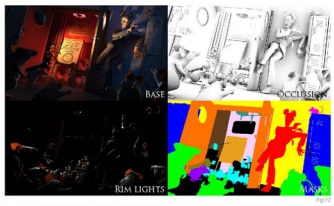
Multiply to enhance the connection between the 3D elements and the addition of some dirt. The masks layer proved handy for selecting individual elements and color correcting them. Smoke, glows, the volume light of the flashlight and dirt marks on the walls were all painted.

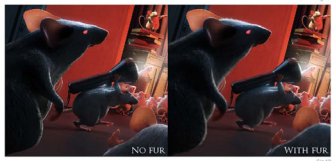
> "I cannot stress enough the importance of working side by side with so many talented artists"

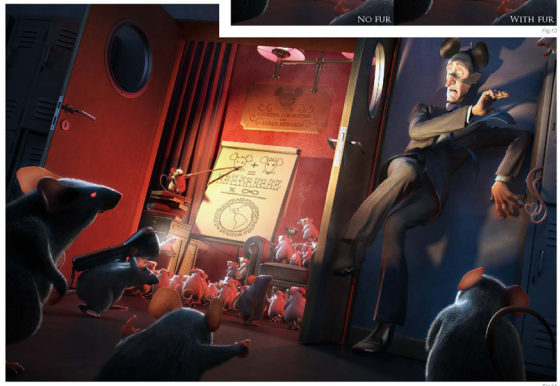
As it was impossible to make 3D fur within the time frame, I created a "fur" brush and painted over the 3D render, picking colors from the base image whilst trying to maintain the effect of the rim lights (**Fig.13**).

Conclusion

I really feel that this challenge forced me to go beyond my limits. I cannot stress enough the importance of working side by side with so many talented artists. I will cherish this challenge as a great experience and recommend everyone to join this rollercoaster ride (**Fig.14**).







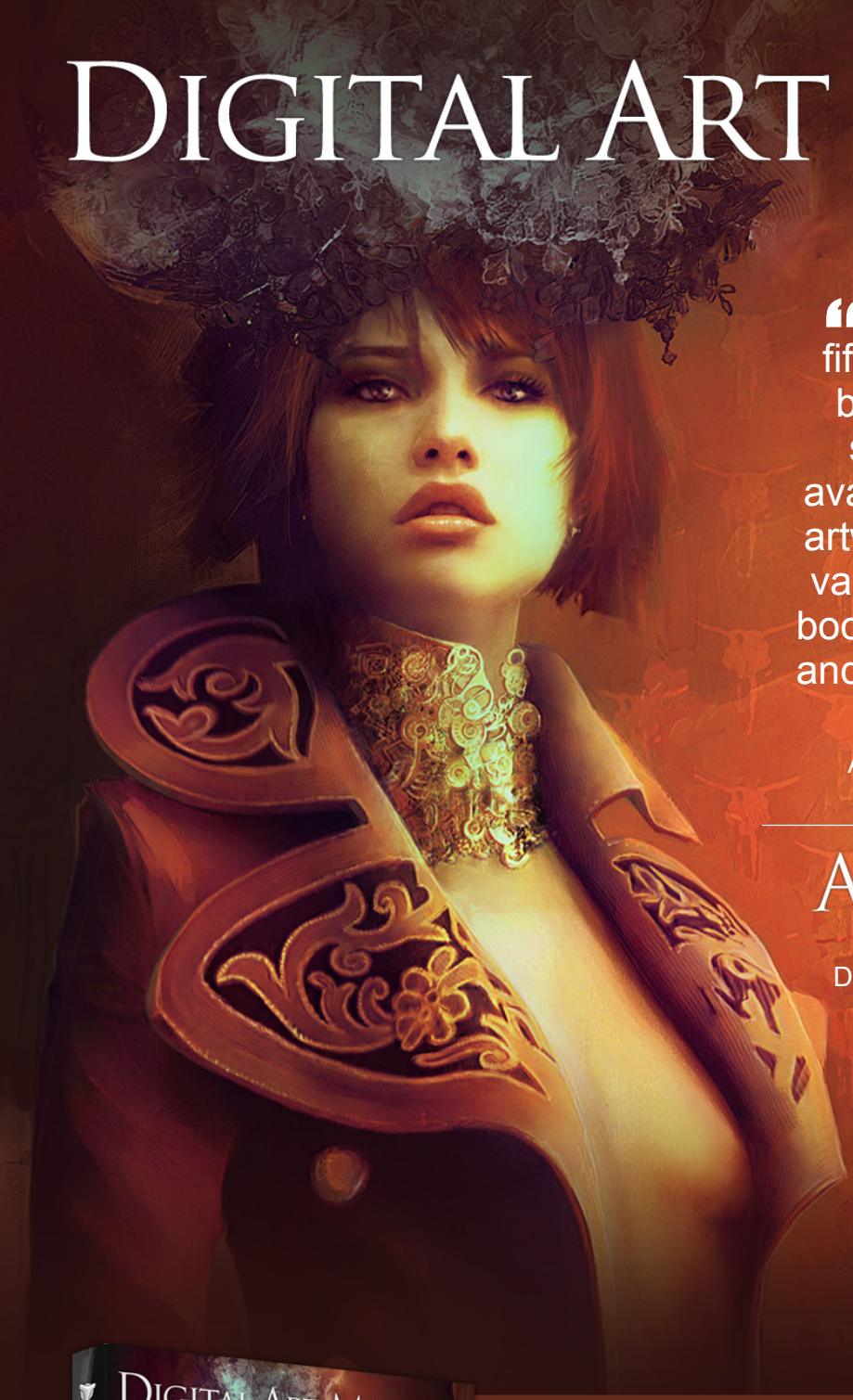
Artist Portfolio



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DIGITAL ART MASTERS
:VOLUME 5



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Following on from the success of our first four books, we received yet another overwhelming response to our call for submissions for Digital Art Masters: Volume 5. Once again over 1,100 submissions made their way into the Digital Art Masters mailbox, proving to us that the series is becoming ever more popular with not only our readers, but artists around the world too!

From this massive number of incredible entries, the 3DTotal team began the difficult task of choosing approximately 300 images to take through to the next round. To help in the task, we enlisted the help of industry professionals Tim Warnock (matte painter), Till Nowak (3D artist) and John Kearney and Chung Wong (videogame artists - VooFoo Studios) to be our guest judges. These wonderful artists braved the headaches of a grueling judging process and helped the 3DTotal team to select the 50 stunning images that appear in this year's fantastic line-up.

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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING

3ds max



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Concept

CHAPTER 2 | DECEMBER 064
Modeling the Low-Poly Version

CHAPTER 3 | JANUARY ISSUE 065
Modeling the High-Poly Version

CHAPTER 4 | THIS ISSUE
Mapping and Unwrapping

CHAPTER 5 | NEXT ISSUE
Texturing

CHAPTER 4 - MAPPING AND UNWRAPPING

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

CREATING THE CELERITAS CHAPTER 4 - MAPPING AND UNWRAPPING

Software used: 3ds Max

There are, of course, a lot of ways that you can unwrap your model. You can do it in Max using its standard tools or you can use some of the third party plugins for Max. You can even use some of the standalone unwrapping applications. I've never liked the unwrapping tools in Max (and I can't even remember the reasons anymore) so I found a great alternative. There's a small app called simply, UVLayout, and it's made by Headus Pty Ltd.

Anyway, since your geometry is certainly different from mine it wouldn't make much sense to show you how I tackled every single piece of that geometry. So what I'll do instead is to show you how to use some basic UVLayout tools and the general workflow I use for unwrapping. Also bear in mind that UVLayout is much more than meets the eye. Explaining the whole app would take a lot of time and pages of text, so I encourage you to go to: http://www.uvlayout.com/, look under the video section, and take the time to go through all of it. You'll find all the tools there and the options explained in-depth, for both beginners and advanced users too.

First you need to decide how many maps you want to have for your model. You need to take into consideration the size of the model, material properties and level of detail you want for your maps. If you don't need too much detail, you can use one map for the model. I usually like to split up the pieces of the model into several different maps as this allows me to have more resolution and details. Also splitting the model will increase performance while unwrapping.

The next steps are quite straightforward. You need to export the geometry as an OBJ file, import it into UV layout and unwrap and save it. Then simply import it back into 3ds Max.

Fig 01

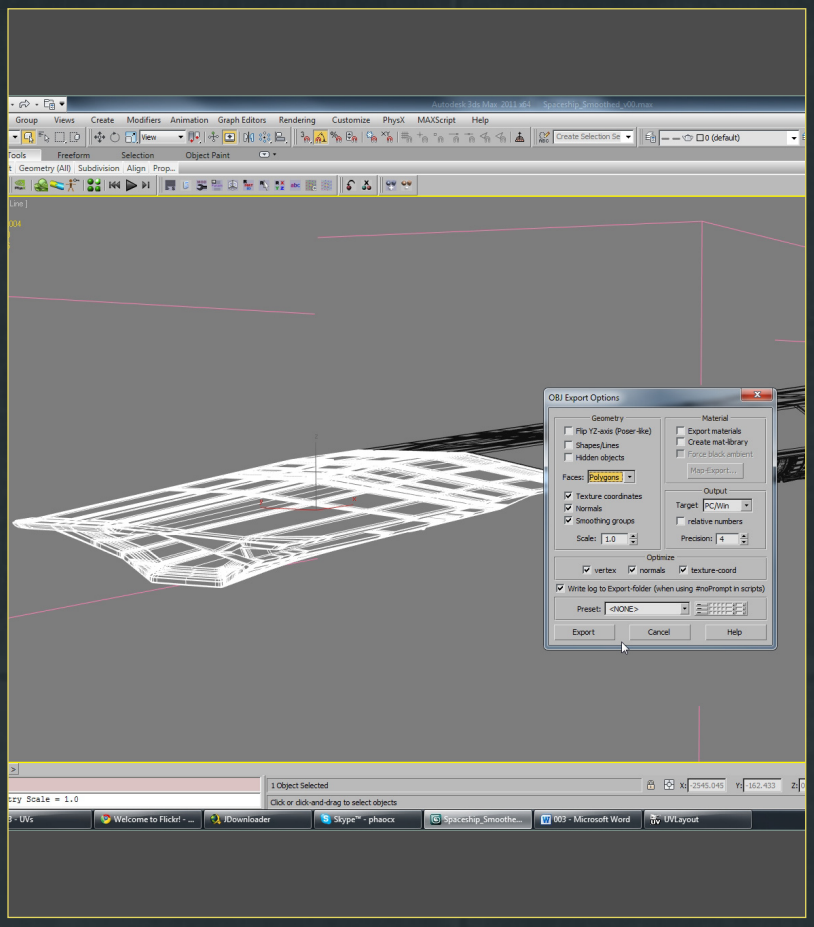
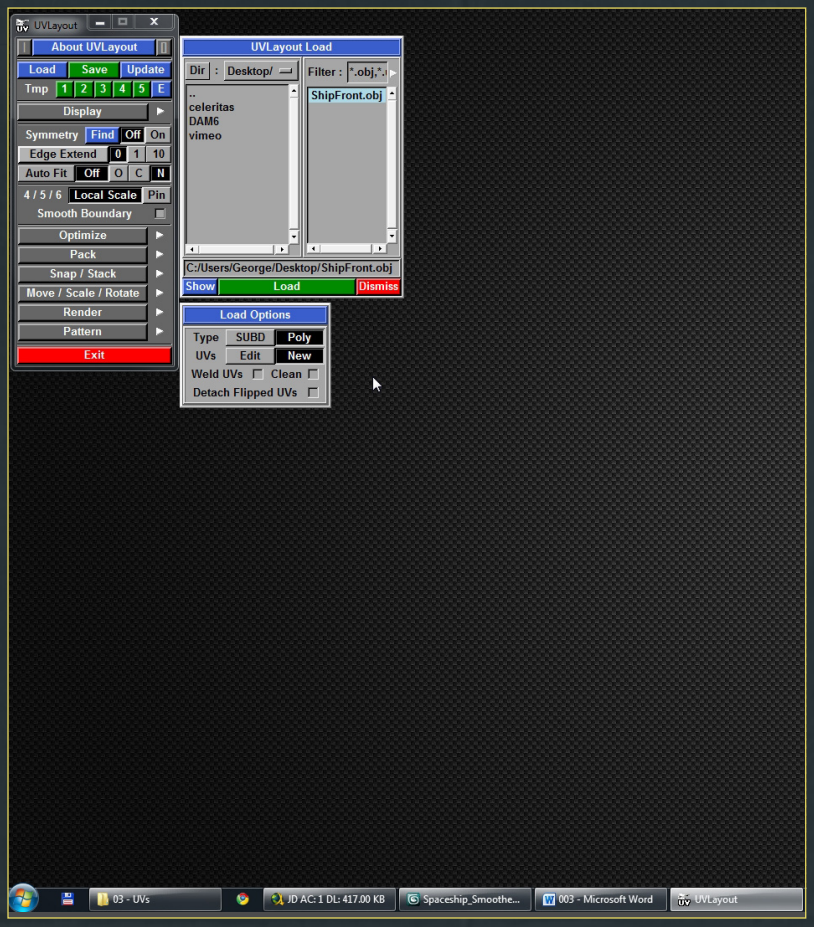


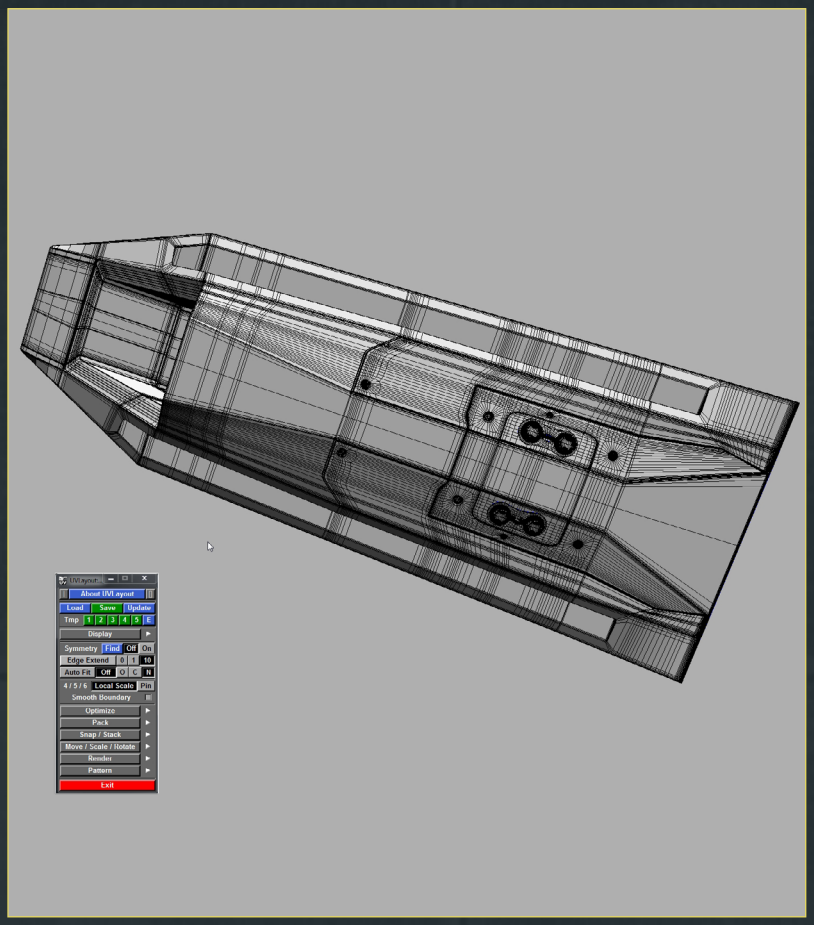
Fig 02



NOTE: Sometimes you don't have to unwrap the whole model. You can simply put the UVW Mapping modifier onto your geometry inside 3ds Max and use some of the predefined mapping types that this modifier offers. However mapping objects rich in detail in this way can have some serious drawbacks later on in the process, so I tend to avoid this whenever I can. Unwrapping complete geometry in UVLayout gives you ultimate control over your UVs so that's why I prefer the method of unwrapping everything "manually" instead of using Max's UVW modifier.

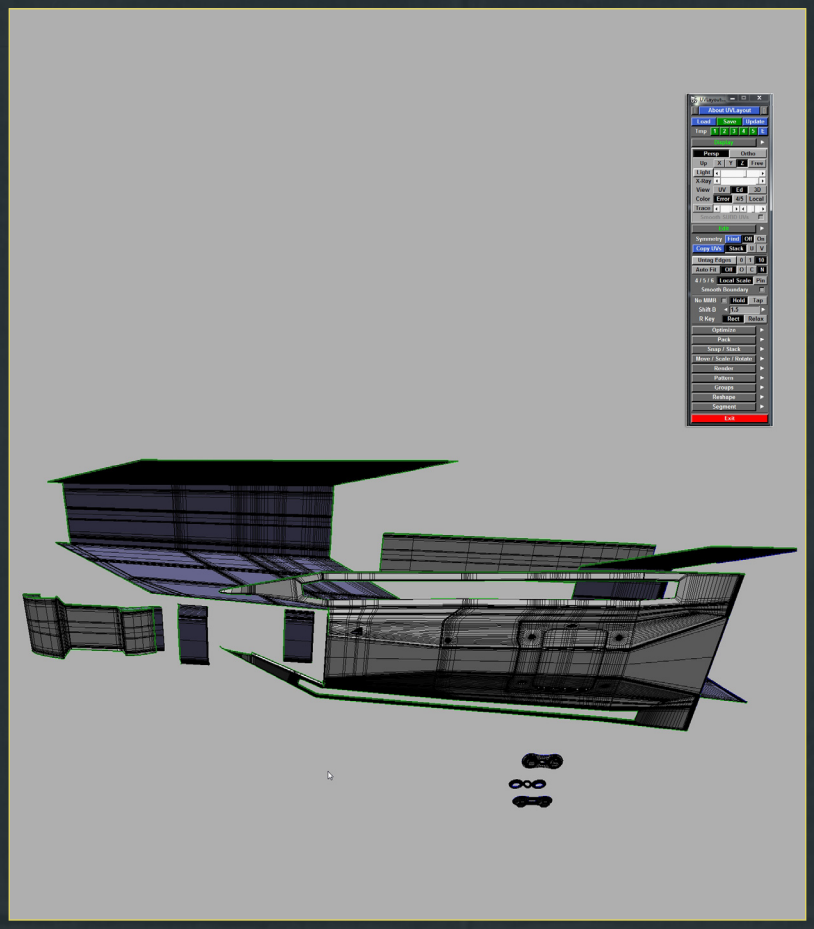
We can start by selecting the front part of the ship. Then go to File > Export > Export Selected. Choose a destination for the file and from the Save As Type drop down, choose "OBJ" and save. An OBJ Export Options window will pop up. Here you can uncheck Flip YZ-axis, Export Materials and Create Mat-Library. Set Faces to Polygons and set the Scale to 1.0. Then export (**Fig.01**).

Fig 03



Start UVLayout. Navigate through your HDD to find the exported OBJ and then load it in. Select the file and in Load Options select Type > Poly and UVs > New and load it (**Fig.02**).

Fig 04



An OBJ will load into UVLayouts Edit view. You can hit the Display button to see more display and view options. Edit view is like a viewport in any other 3D app. You can pan, zoom and rotate your model and this is where all the cutting is going to happen (**Fig.03**).

You can use the Home key to zoom in on an edge that is pointed at by the mouse cursor. It also becomes the center of rotation so you can easily rotate around it. To mark an edge for cutting you just put a mouse cursor over it and hit "C" on your keyboard. You'll notice that a number of edges have turned yellow, indicating that those are the edges marked for cutting. If you want to unmark (de-select) the edge, you can use the W or Backspace key. When you're happy with the selection just press "Enter" to

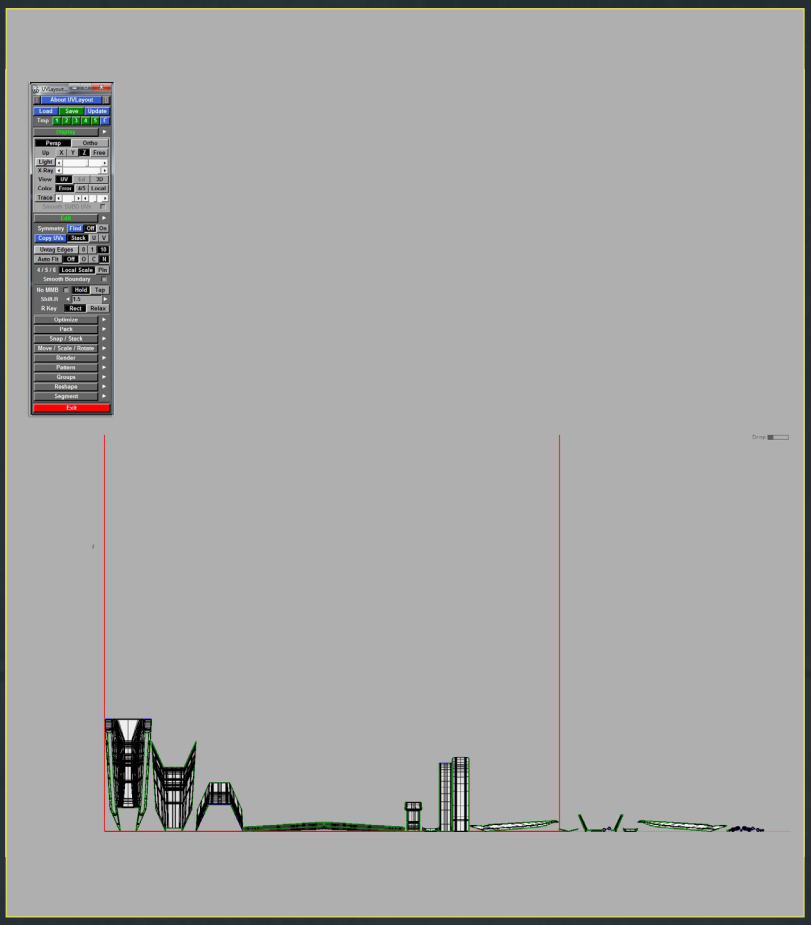


Fig 05

detach selected parts of the mesh. You can use the middle-mouse button and the spacebar to move around detached parts of the mesh in Edit view. Now repeat the same process until you have cut the whole front part of the ship into several satisfying pieces (**Fig.04**).

In order to flatten out our pieces of mesh we need to drop them into the UV view. To do that just put your mouse cursor over a mesh and hit the “D” key on your keyboard. The mesh will disappear from the Edit view. You can repeat the process for all the other pieces or simply hit the “D” key, and click and drag to select all the mesh pieces with the Marquee tool. They will then all be dropped into the UV view. Now to change your view from Edit to UV just hit “1” on your keyboard (**Fig.05**).

If you are not satisfied with the way some pieces look you can drop them back into the Edit view by holding the cursor over them and hitting Shift + D. In this case the mesh will also disappear from the UV View. To go back to Edit view just hit the “2” key.

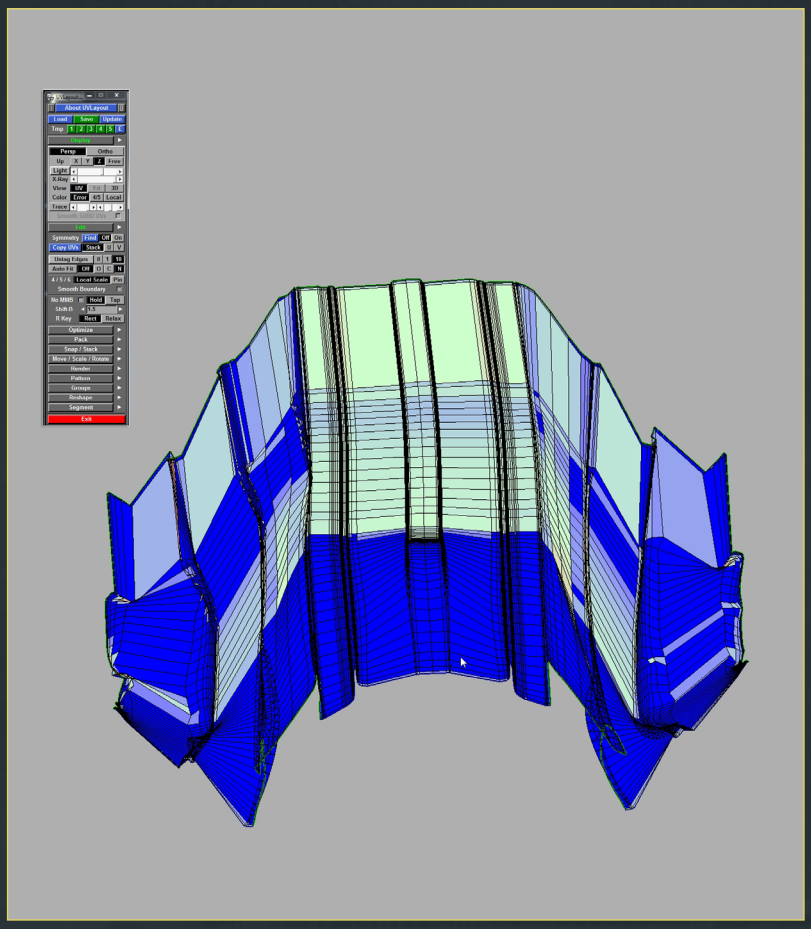
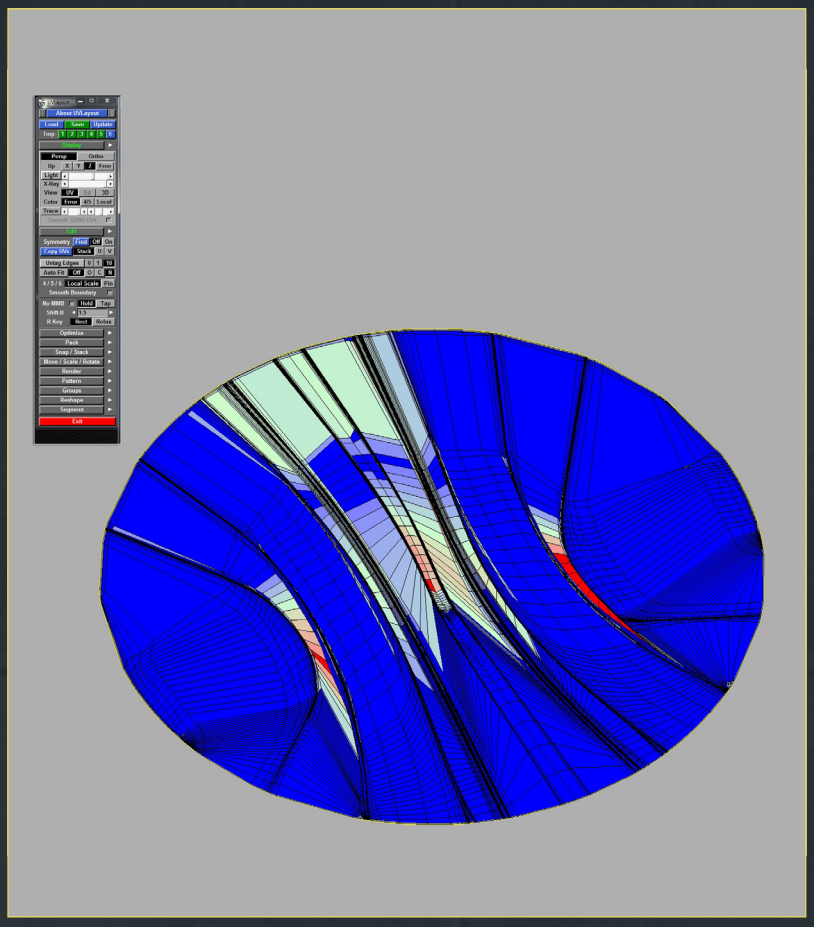


Fig 06

Now it’s time for flattening. To move individual UV shells around the UV view you can use the middle mouse button and spacebar. To start flattening, put the mouse cursor over a piece of the UV shell and press and hold the “F” key on your keyboard. Now, whilst holding the “F” key, down you’ll notice that the flattening process is going on and that your polygons are changing position, shape and color (**Fig.06**).

Color changes are a sort of diagnostic tool that is telling you how much stretching is going on. Basically shades of blue are telling you that those UVs are compressed in comparison to the actual geometry, and shades of red are telling you that those UVs are stretched. The more saturated shade means that the stretching/compressing is bigger and more desaturated, almost white shades mean that there's a very small amount of stretching/compressing going on. So from this you can tell that we want to have as many white UVs as possible. Beside the flattening process that I just mentioned there's another one in UVLayout. To try that out put a mouse cursor over a shell and hit Shift + F. This time UVLayout has created an oval boundary from our objects and is using it to stretch all the polys inside so that it can easier proceed with the flattening (**Fig.06a**).

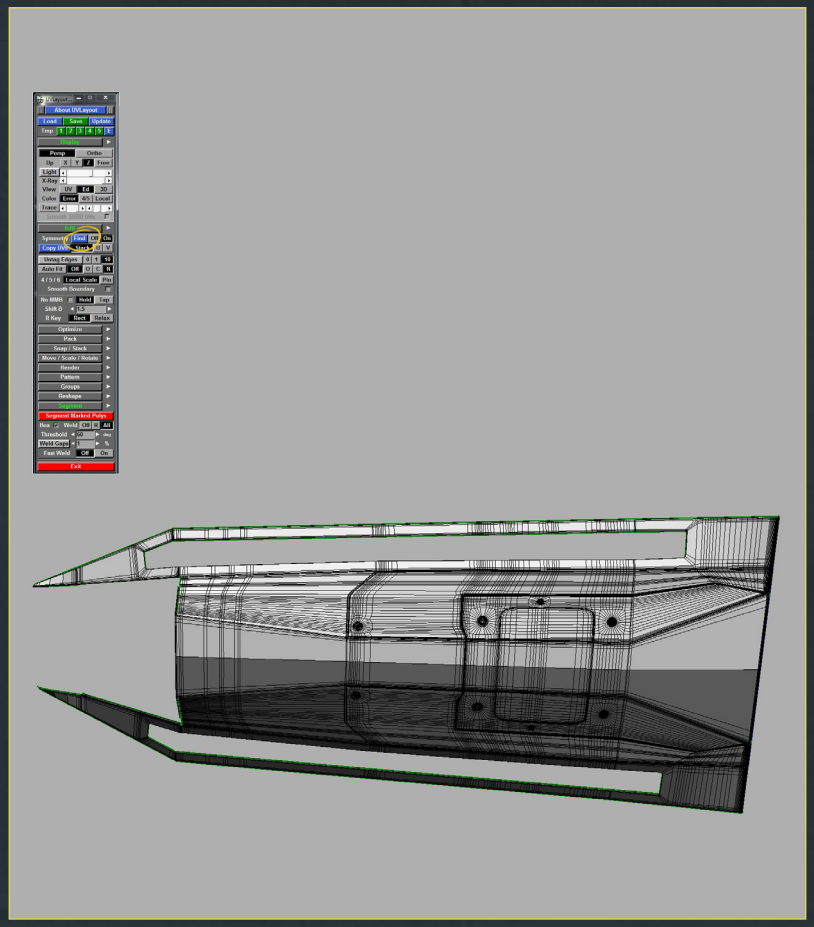
Fig 06a



This process takes 60 second unless you interrupt it by hitting the spacebar. After 60 seconds the flattening starts and this also lasts 60 seconds unless you interrupt it. You can use one or the other method of flattening depending on how dense and complicated your meshes are. In general if you have simple planar-like meshes you can just use the F key method. If you have more complex stuff then Shift + F is the way to go. But experimenting with both will help you understand which method to use.

A lot of the time you'll be working with symmetrical models. UVLayout has a way of dealing with symmetrical geometry that allows you to work on only one side while the other side is reflected. This way you don't have to do the same work twice. To activate Symmetry you need to be in Edit view. You need to activate Symmetry first. Do all of your mesh cutting and then proceed with flattening. To activate symmetry you need to click the Find blue button, right next to where it says Symmetry, under the Edit tab (**Fig.07**).

Fig 07



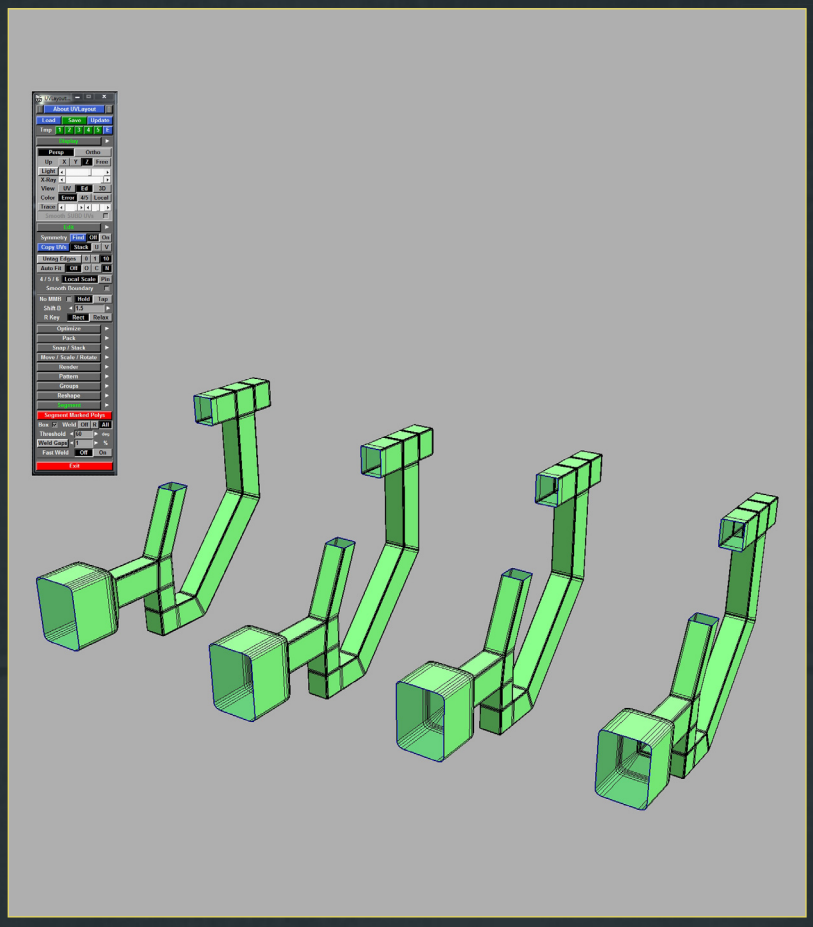


Fig 08

Once you click it, Symmetry mode is activated and is waiting for you to tell it where the dividing line is going to be. The line is a sort of axis along which the symmetry is going to take place. You should now find one edge that is at the center of your object and click it. UVLayout will then extend that line over the whole object and shade one part of it in white and another in gray. This means that the symmetry is successfully found and that your model is completely symmetrical. You can now drop your mesh into UV view for flattening.

There's another great tool in UVLayout that can help you to speed up the process. It's called Segment. The Segment tool is designed for automatic cutting and flattening of a single or multiple geometry pieces. The Segment tool is designed for hard surface geometry and works best in situations where you have a lot of pieces of geometry that are not very complex.

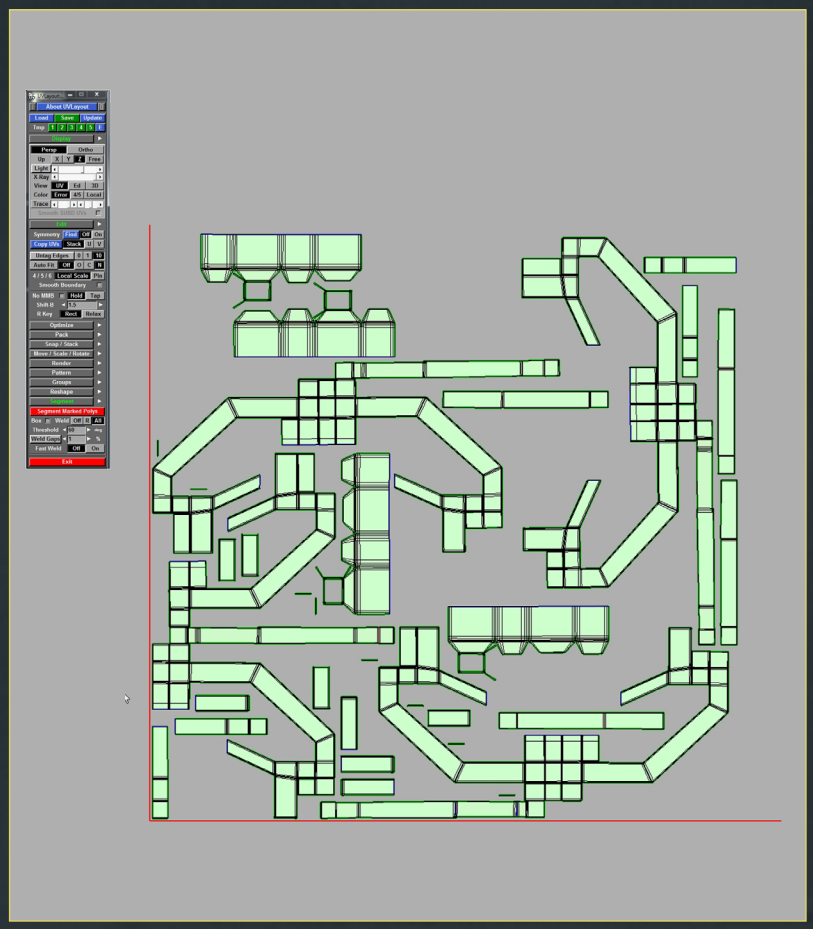


Fig 08a

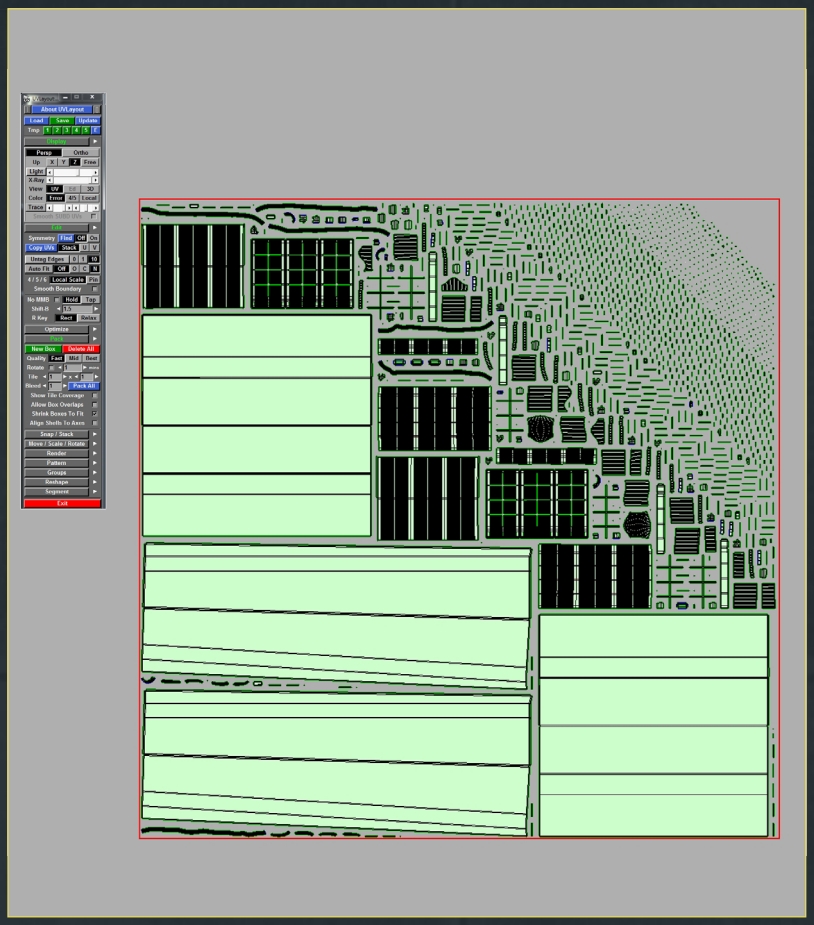
Some of the geometry that is in the back part of the ship (which is very detailed) is ideal for this tool. In this case we don't need to go through cutting and flattening at all. All we need to do is mark the pieces that we want and the Segment tool will do the rest. To mark a piece of geometry just put a mouse cursor over it and hit the "G" key twice. "G" is the command for marking individual polys in Edit view, but when you hit it twice it will automatically select the whole piece of geometry. You can select several pieces this way and when you're happy with the selection just hit "Segment Marked Polys" under the Segment tab (**Fig.08**).

UVLayout will now cut and flatten selected geometry. Go to the UV view to inspect the results (Fig.08a). As you can see, Segment is a really great tool that saves us a lot of time and effort. As you probably noticed there are some options under the Segment tab, but I leave it up to you to explore these.

After you've finished flattening of all the pieces that you've imported into UVLayout you'll notice

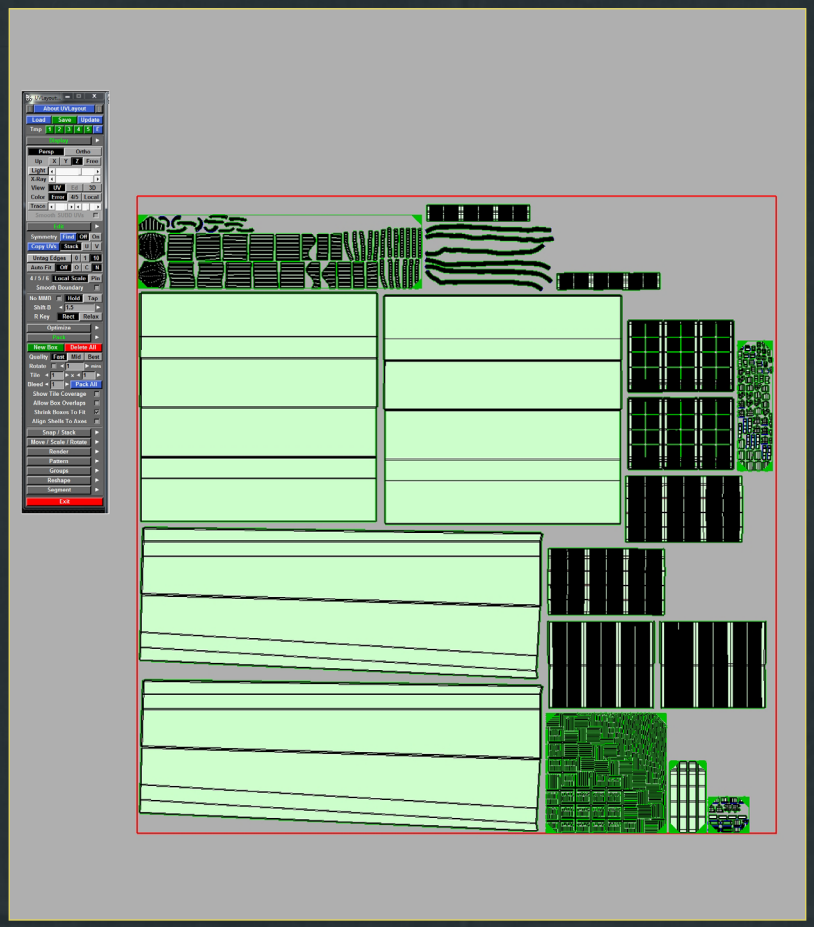
that the UV space is in a mess with all the shells chaotically thrown around. An easy fix for that is to hit the "]" key on your keyboard. This is a basic pack command which will automatically fill the UV space from 0 to 1, arranging all the shells inside the box in the best way for space utilization, leaving very little or no free space (**Fig.09**).

Fig 09



We can go even further when organizing UVs by using the Pack tool. The Pack tool is a great way to manage our UV space. It's different from the simple pack command because it introduces boxes which give us more management control. With boxes you can group several shells by enclosing them into a separate box and then applying the pack command inside it. To test this out select several shells, preferably ones that are part of the same piece of geometry, and then hit the red "New Box" button under the Pack tab. This will create a box around the selected shells. Now put your mouse cursor inside that box and hit the "]" button to tightly pack the shells that are inside. You can use this method several times to organize the UV space as you see fit (**Fig.09a**). By organizing UV space using Pack you can make your job a lot easier when it comes to texturing.

Fig 09a



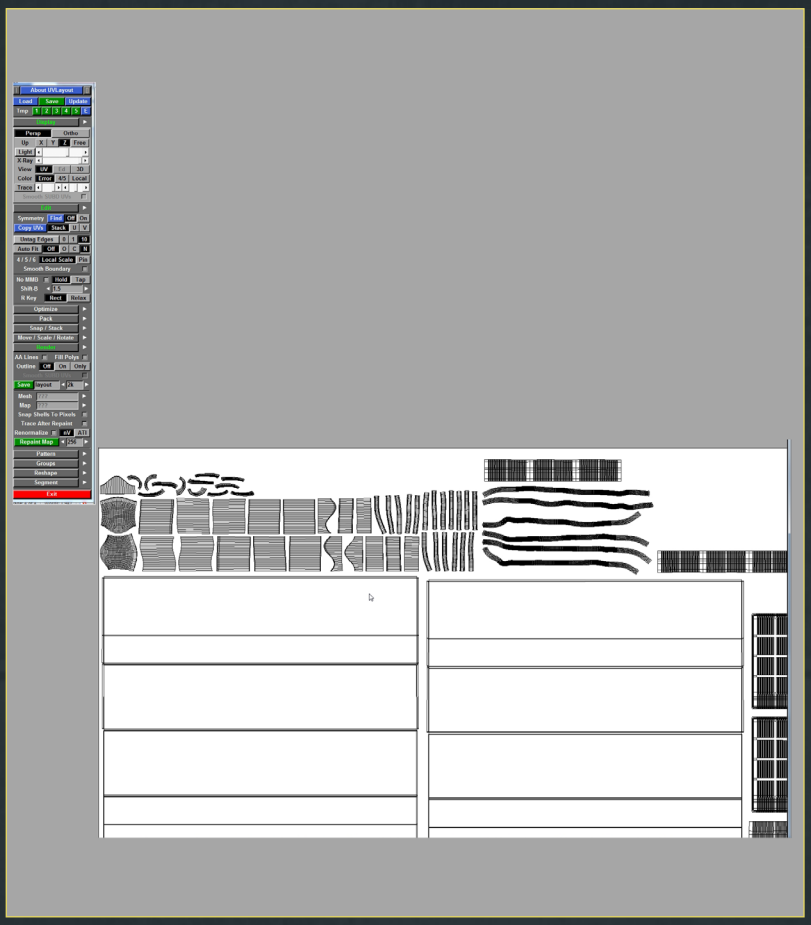


Fig 10

Once you're satisfied with the way your UV space looks you might want to render it out. Go to Render Tab > Save and tab you'll get a pop up window called "iview" with the linear layout of your UVs. You can use this image later when painting textures for easier navigation (**Fig.10**).

Finally you can save your geometry with its newly created UVs by hitting the Save button at the top of the UI. Select the desired destination directory, enter the file name and then save again. And you're done! The one thing you should pay attention to when importing geometry back into 3ds Max is the Texture Coordinates check box in the OBJ Import Options dialog box. You want to make sure that this is checked on.

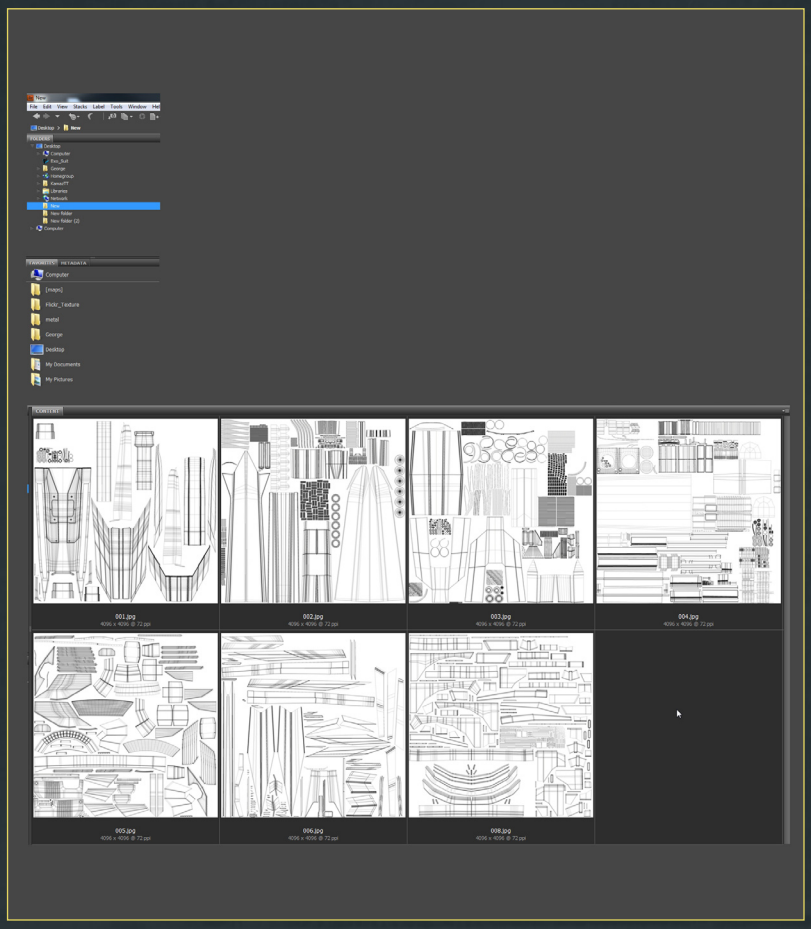


Fig 11

Finally after going through the whole model I ended up with several UV maps ready for painting (**Fig.11**). Based on your early decision on how to split your model you may end up with only one map or tens of them. It's easier to manage only one map, but it might be a bit difficult (performance-wise) to import a whole model into a UVLayout and effectively work there. That's why I ended up with several maps at the end.

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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING



CHAPTER 1 | NOVEMBER ISSUE 063
Concept

CHAPTER 2 | DECEMBER ISSUE 064
Modeling the Low-Poly Version

CHAPTER 3 | JANUARY ISSUE 065
Modeling the High-Poly Version

CHAPTER 4 | THIS ISSUE
Mapping and Unwrapping

CHAPTER 5 | NEXT ISSUE
Texturing

CHAPTER 4 - MAPPING AND UNWRAPPING

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

CREATING THE CELERITAS CHAPTER 4 - MAPPING AND UNWRAPPING

Software used: Maya

PRE-FLIGHT

There is one last operation to perform on the mesh before approaching the UV mapping and it is to combine the geometry that is in the middle of the ship. This means the upper and lower deck, and the engine (**Fig.01 – 03**). To do this operations select the two halves and go to Mesh > Combine.

Fig 01

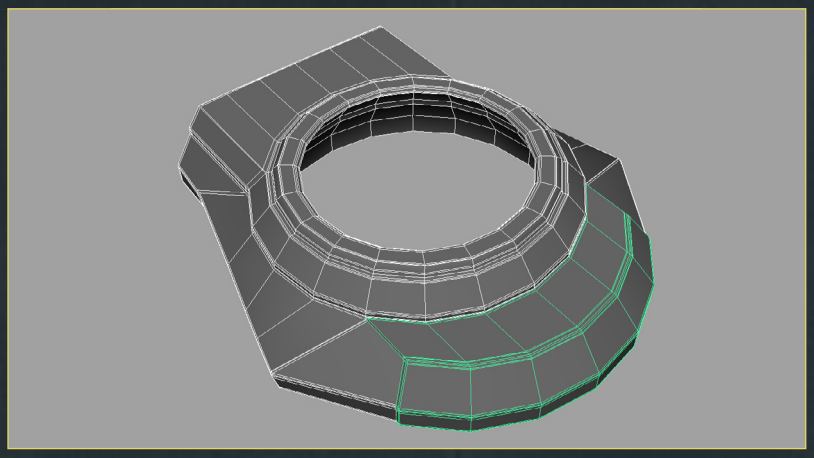
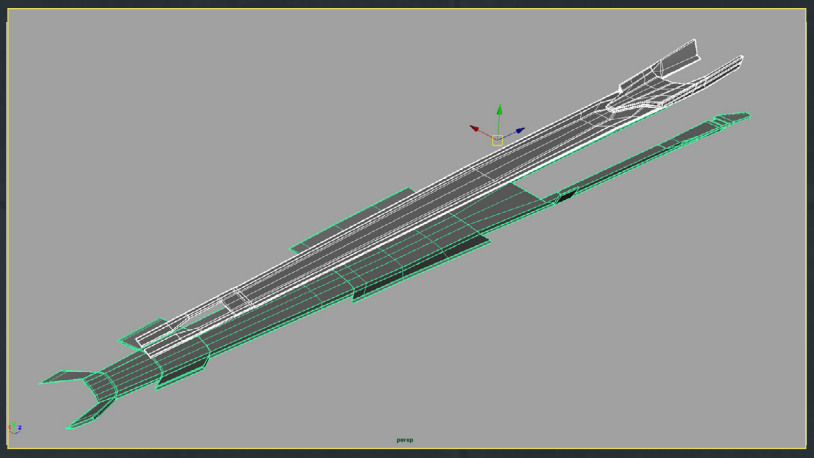


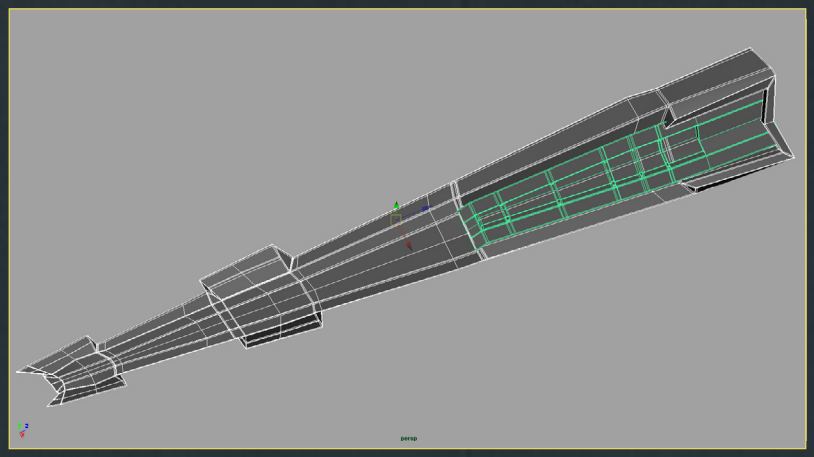
Fig 02



NOTE: If one of the two halves disappears after implementing this command, don't worry. Just select the geometry again, duplicate it and set Scale (in the attribute window: Ctrl + A) on the X axis to -1 and combine it again.

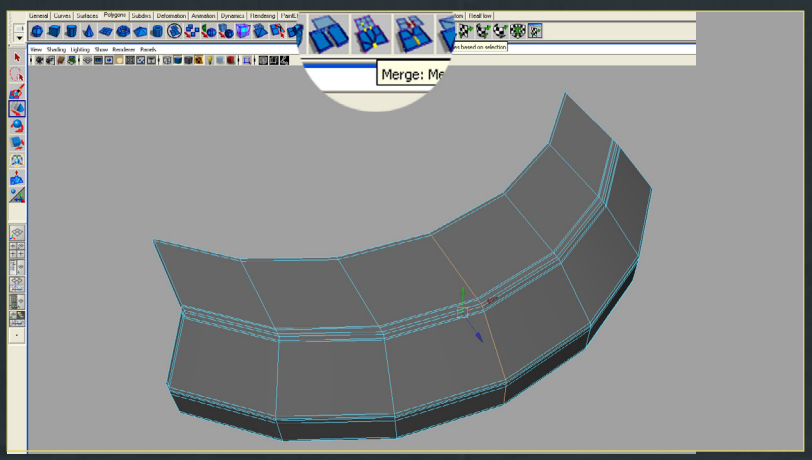
NOTE 2: When modeling in Maya, the program stores the history for every piece of geometry. If you notice that Maya slows down or it takes more time to refresh, save a copy of your model and hit Edit > Delete by Type > History. This way you will manage to work on a lighter model.

Fig 03



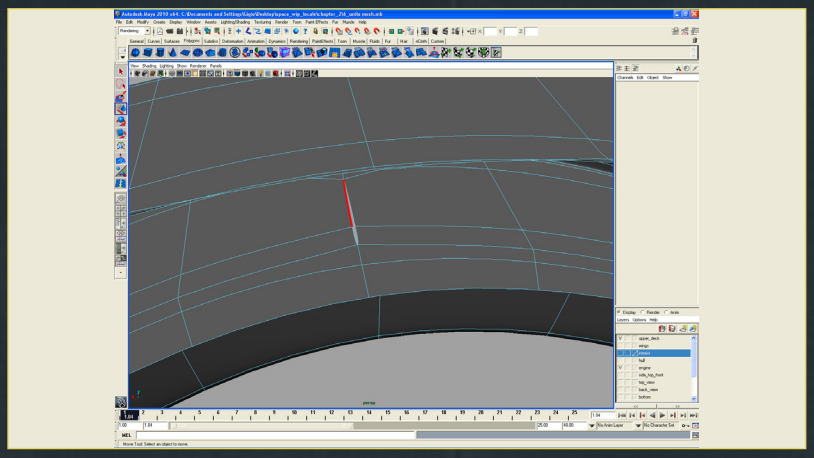
Once you have combined the two halves you'll have to merge the two border edges at the center of the combined geometry in order to obtain a unique surface. To do this select the border edges and hit the Merge Vertices/Border Edges tool that stands in the Polygon shelf in the upper banner of Maya (**Fig.04**).

Fig 04



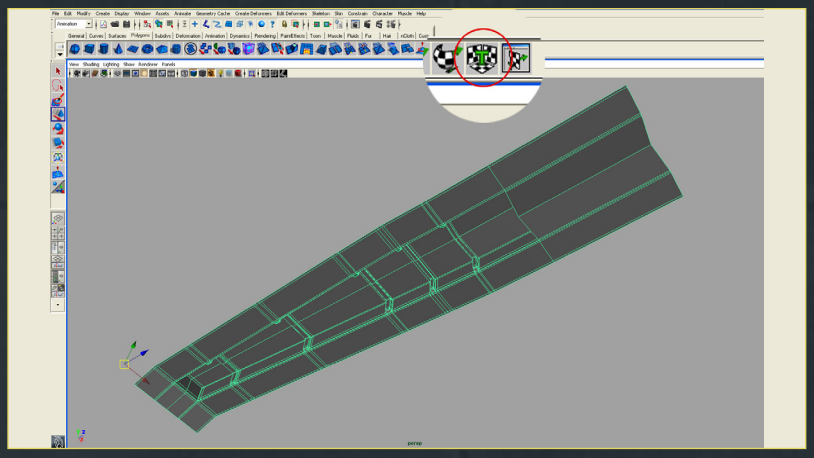
Now hit the “3” key and switch on the Smooth Mesh preview. The Merge Edge tool has a threshold and if you merge vertices too much then they won’t weld together (**Fig.05**). Usually there are just two or three vertices and you may have to fix them manually by selecting the two vertices and hitting Merge again.

Fig 05



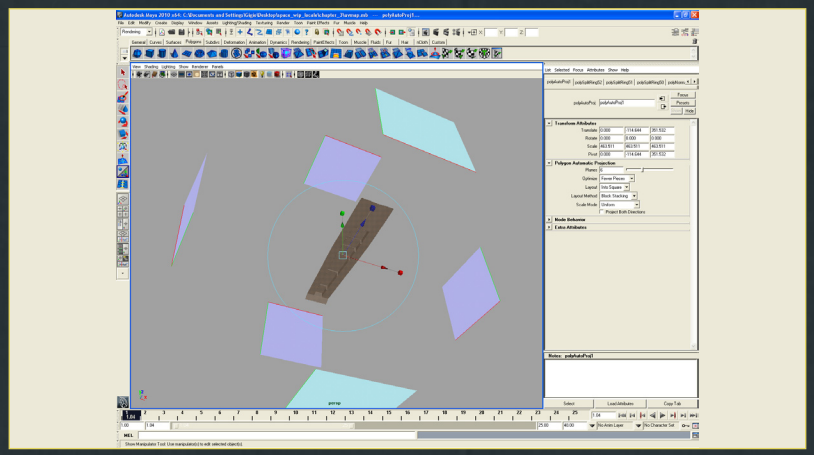
Once you have checked all the meshes and deleted all the history it’s time to move on to UV mapping. To map a piece of geometry it is necessary to unwrap it first. Select the geometry and hit the Automatic Mapping button (**Fig.06**).

Fig 06



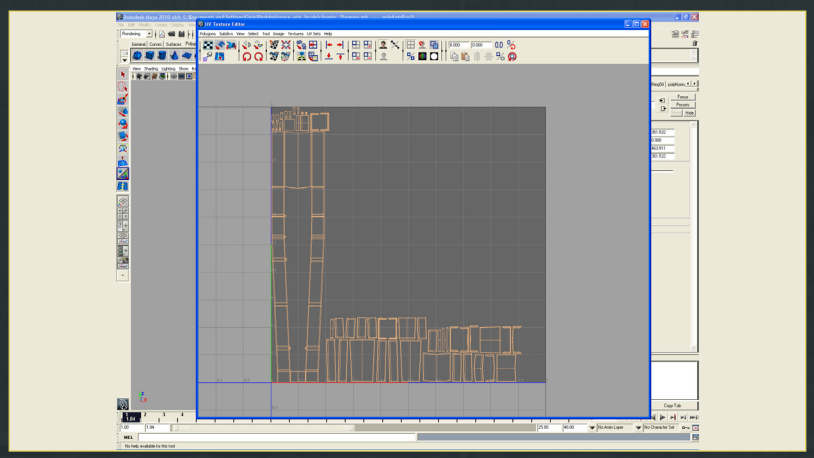
You will then see a series of planes (**Fig.07**). These planes must be as perpendicular as possible to the geometry in order to obtain a non-distorted unwrap of the map. The default settings for automatic mapping are perfect for hard surfaces.

Fig 07



To check the result of the automatic mapping, open the UV Texture Editor (Window > UV Texture Editor) and what you’ll see will be your geometry split in a series of pieces (**Fig.08**).

Fig 08



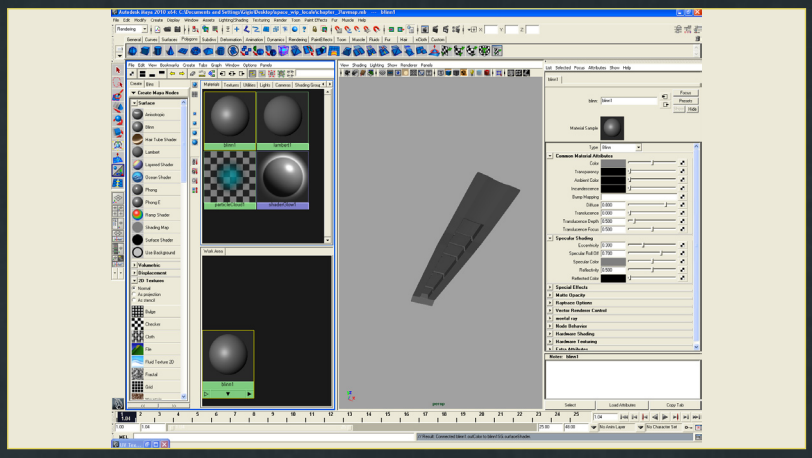


Fig 09

Now open the Hypershade window (Window > Rendering Editors > Hypershade or select the Hypershade/Perspective view from the Views presets in the left shelf) and select a Blinn material by clicking on it in the materials list (**Fig.09**).

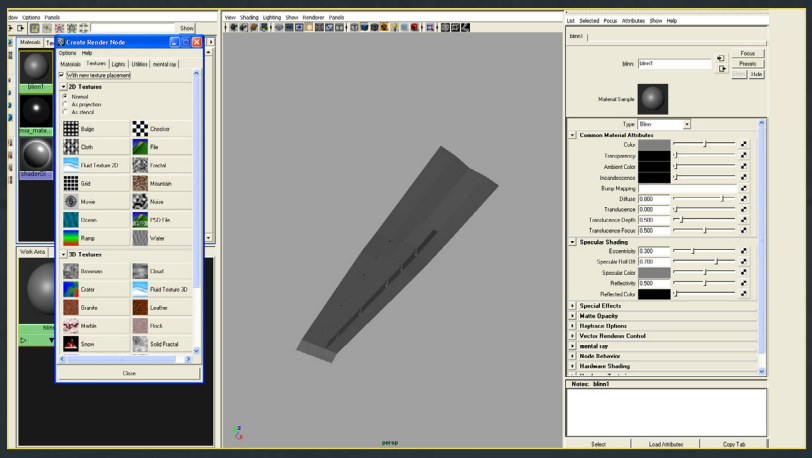


Fig 10

In the right shelf you'll have the material attributes. Click on the button near the Color slider. The Create Render Node window will then appear so click on "Checker" (**Fig.10**).

Now select you geometry. Hold right-click on the shader and select "Assign to Selection". Alternatively you can drag the shader onto the geometry holding the center button of the mouse.

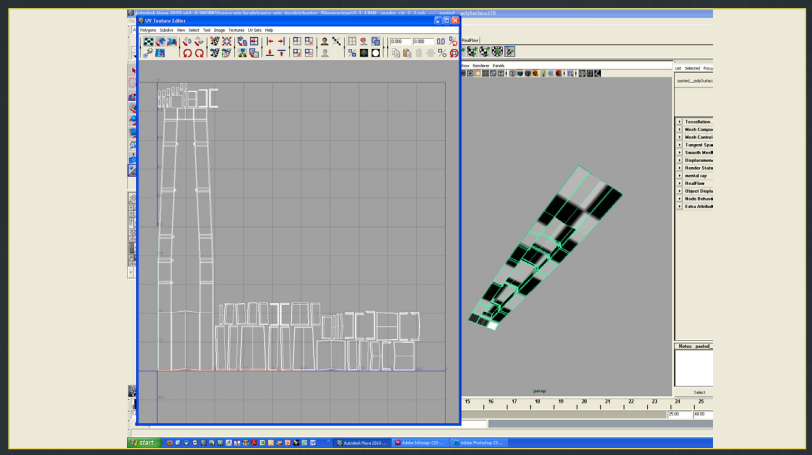


Fig 11

The checker pattern will help you to check the texture's deformations and to fix them in the texture editor (**Fig.11**).

Now we have to attach the UVs in the texture editor. The way the UV mapping procedure works is that you have to reduce the number of pieces to a minimum. These pieces don't have to be too distorted and the seams must be hidden at points of the mesh where they won't be noticed. The base command is the "Move and Sew" that works on the edges and on the UV vertices. We'll work with the UV vertices by right-clicking on the UV Texture Editor and selecting "UV".

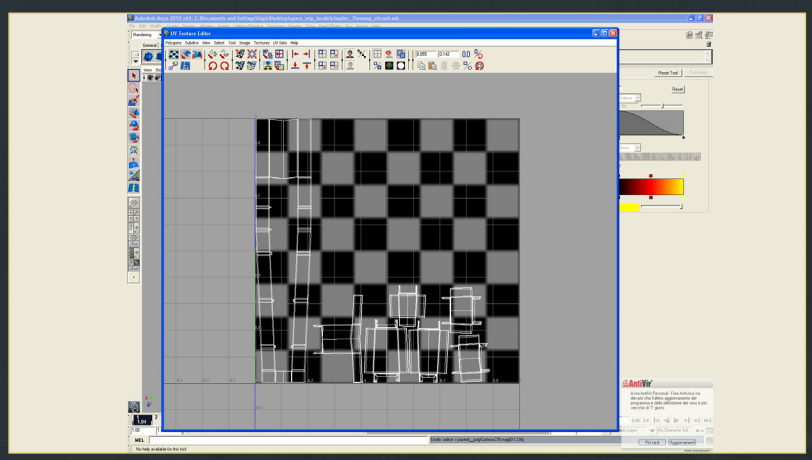
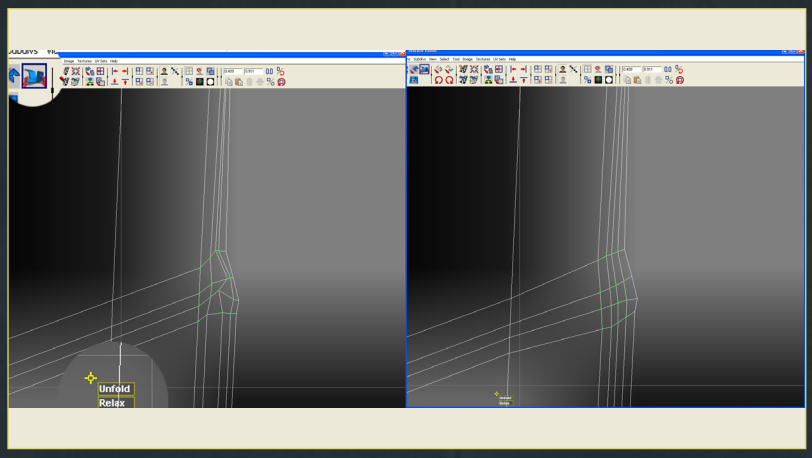


Fig 12

Now select a UV of one of the points of the mesh and click on "Move and Sew". Two pieces of UV will be attached. Notice that the UVs can be moved, scaled and rotated with the same commands as traditional modeling. The final result should look like **Fig.12**.

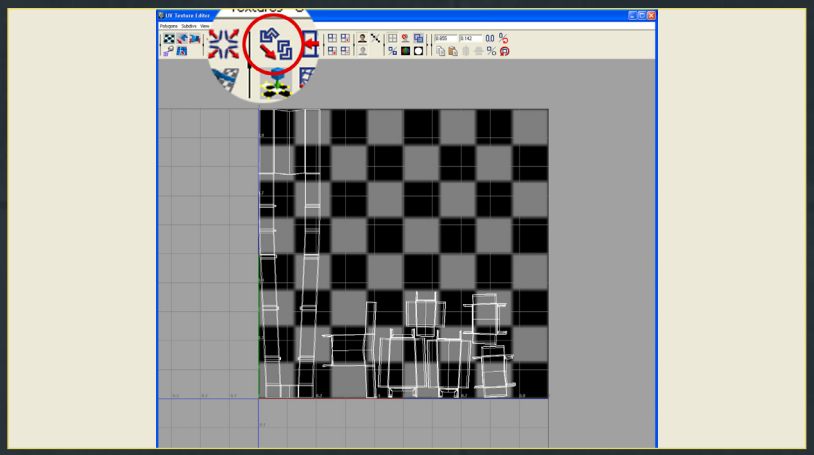
Working with hard surfaces is quite easy since automatic mapping does the hard part, but there are a couple of commands that may help you to save a bit of time. The Unfold/Relax feature smooths the groups of vertices (**Fig.13**).

Fig 13



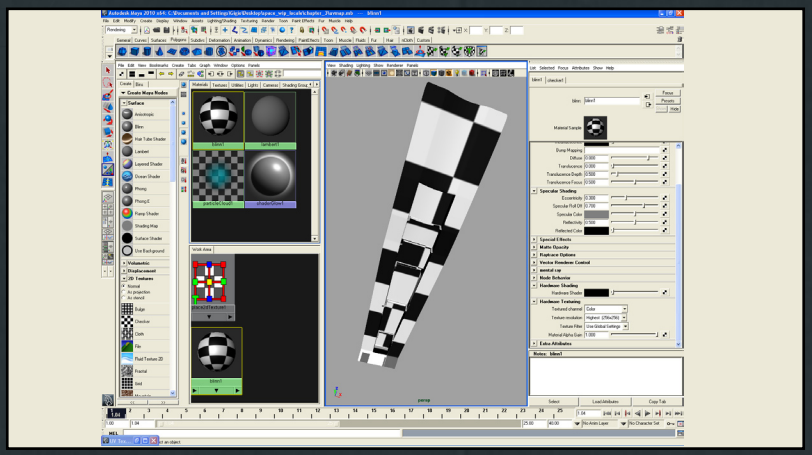
You just have to select a series of UVs, hit the button and slide on the tool while holding down the left mouse button. To fit your UVs in the space, click on the “Select Faces” button (**Fig.14**). This command will re-orient and re-arrange their position to better fit the UV area.

Fig 14



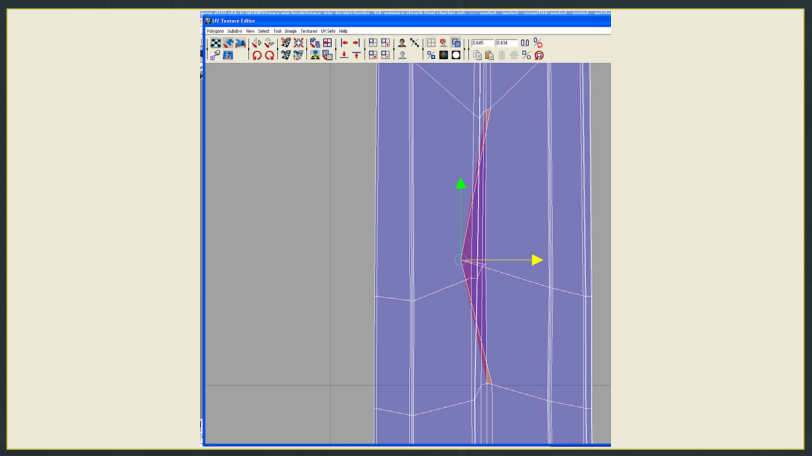
If the checker map seems to be too blurred, you can change its resolution in the Shaders Attribute Editor (**Fig.15**).

Fig 15



To check if there are any overlapping faces you can activate the Shade UV feature (Image > Shade UVs in the texture editor). This tool will help you to get rid of some particularly complicated interlacements of UVs (**Fig.16**).

Fig 16



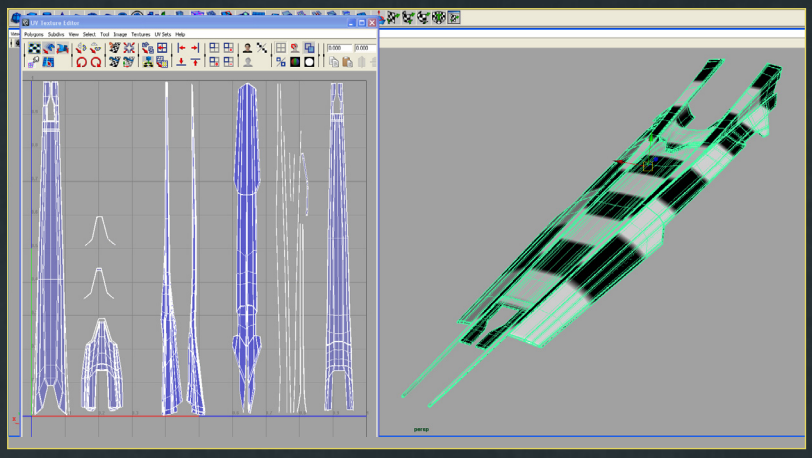


Fig 17

To save disk space and Maya's memory you can group the objects and put their UVs together. You'll just have to adjust the single UV groups to avoid overlapping. **Fig.17** shows a sample of the upper hull's group.

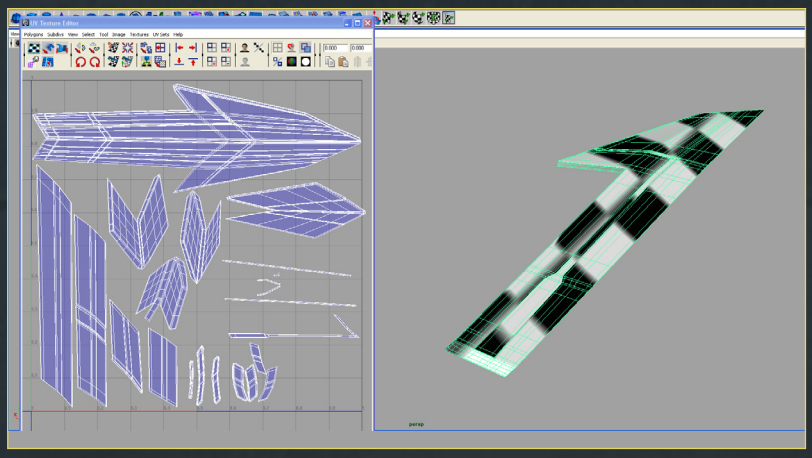


Fig 18

Wings (**Fig.18**).

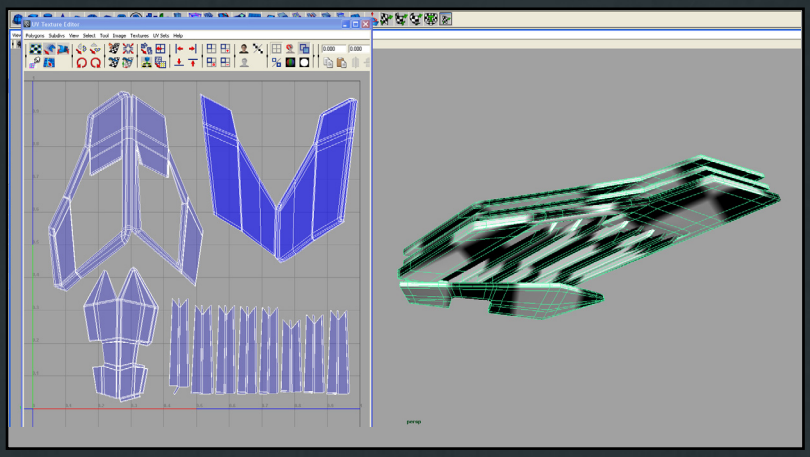


Fig 19

Engine parts (**Fig.19 – 20**).

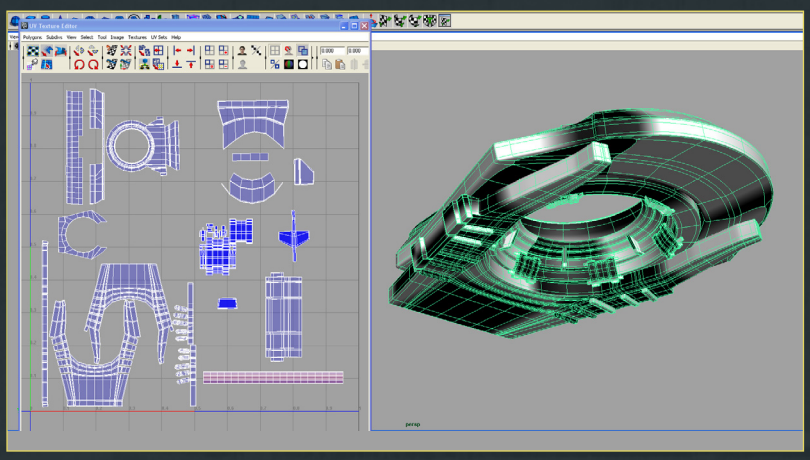


Fig 20

Some interior details (**Fig.21 – 22**).

Fig 21

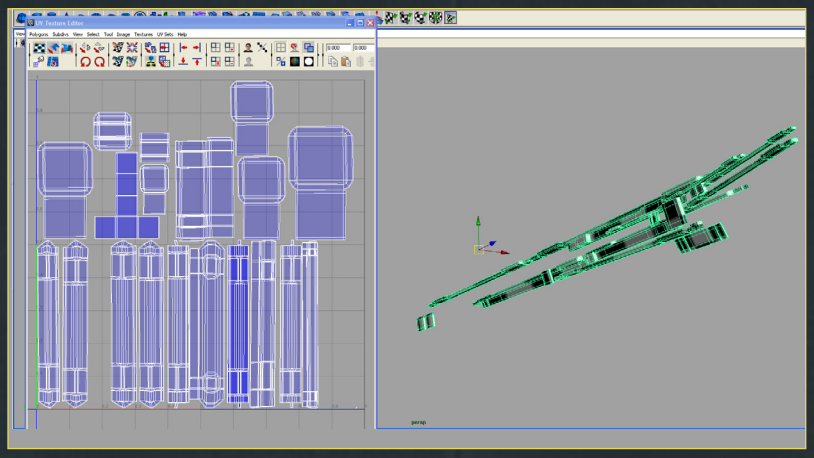
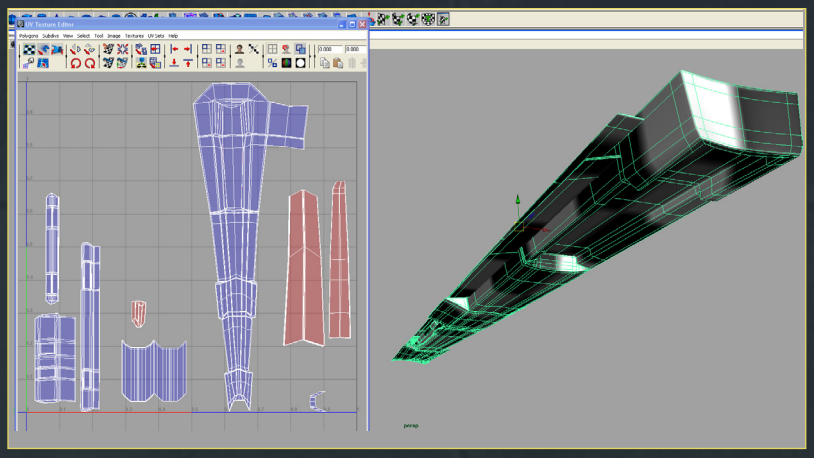


Fig 22



The lower hull (**Fig.23**).

Fig 23

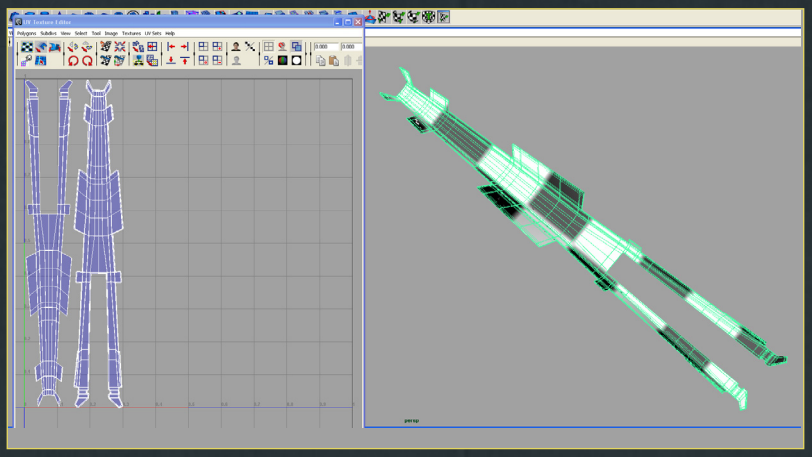
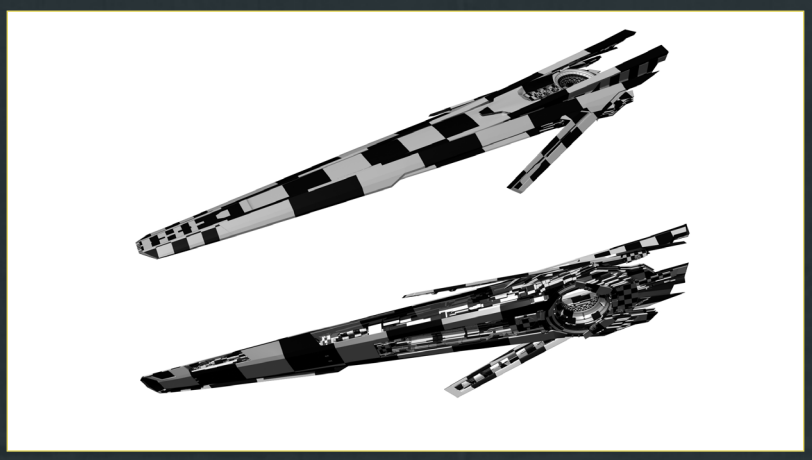


Fig.24 shows a “fully checked” ship.

Fig 24



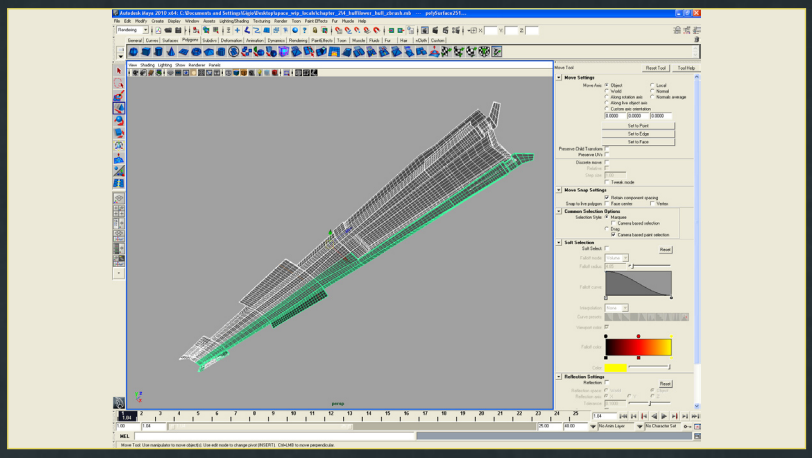


Fig 25

Once it is UV mapped it's time to start shading. To add some more realism and detail to our ship you could use ZBrush. One important thing to keep in mind before starting ZBrush is that we have to export the mesh in the most uniform way possible, so first we have to add some more loops to the hull (**Fig.25**).

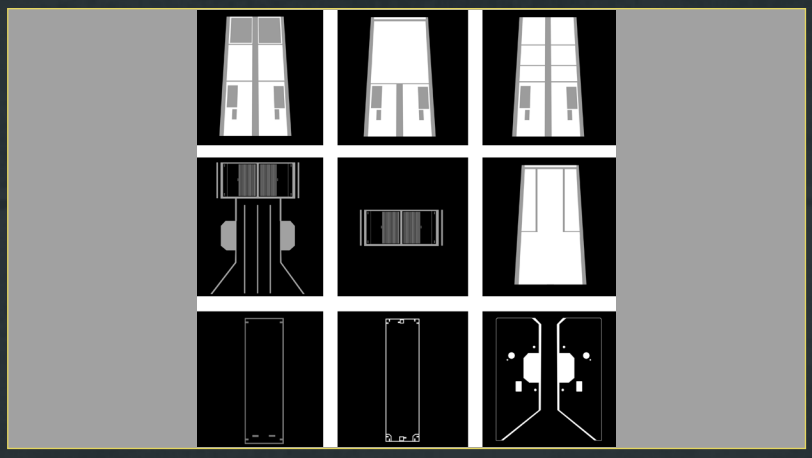


Fig 26

Now go to Window > Settings/Preferences > Plugin Manager and activate the "objExport. mll" plugin, which will let you export your mesh in OBJ format. In Photoshop create a series of alpha brushes, like those shown in **Fig.26**.

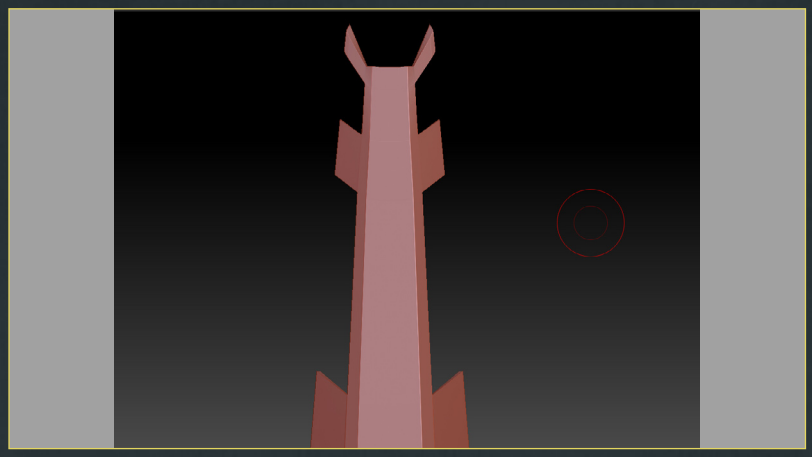


Fig 27

Next launch ZBrush and choose "Import" from the tool palette. Position the hull perpendicular to your window, zoom to the hull's top and divide it as many times as your computer allows you to (**Fig.27**).

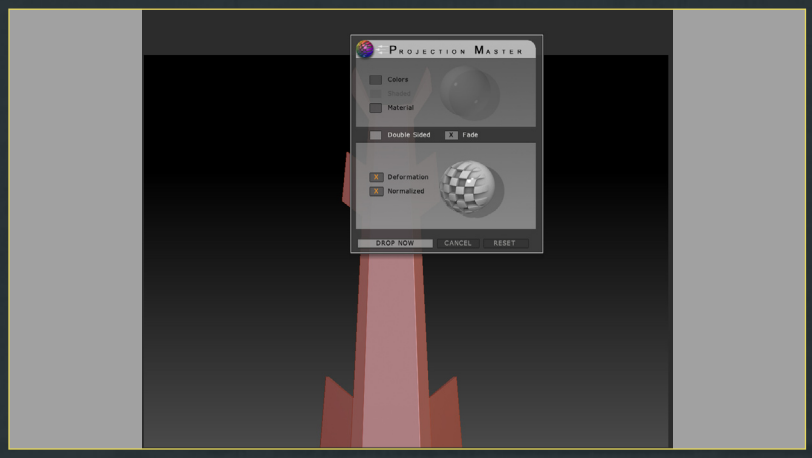


Fig 28

Next activate the Projection Master, un-check the color option, check "Deformation" and "Normalize Flags" and click "drop now" (**Fig.28**).

In the Alpha tab port choose one of the alpha brushes (**Fig.29**), set Intensity to 3 and drag it over the hull (**Fig.30**). Adjust it using the Scale and Move button.

Fig 29

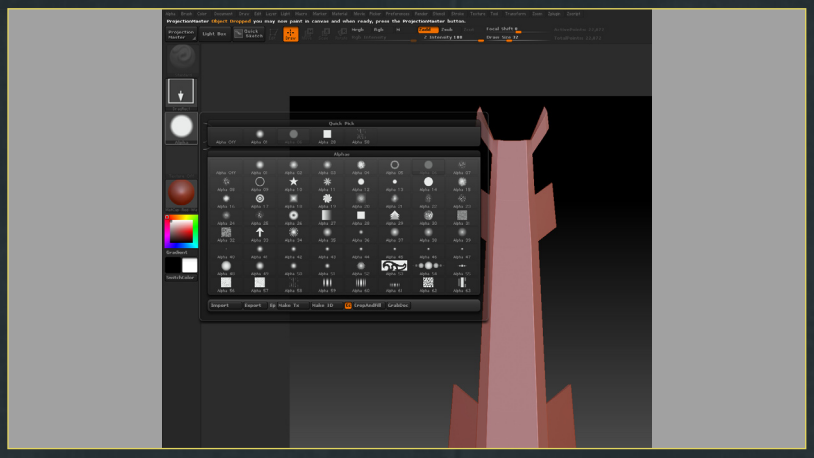
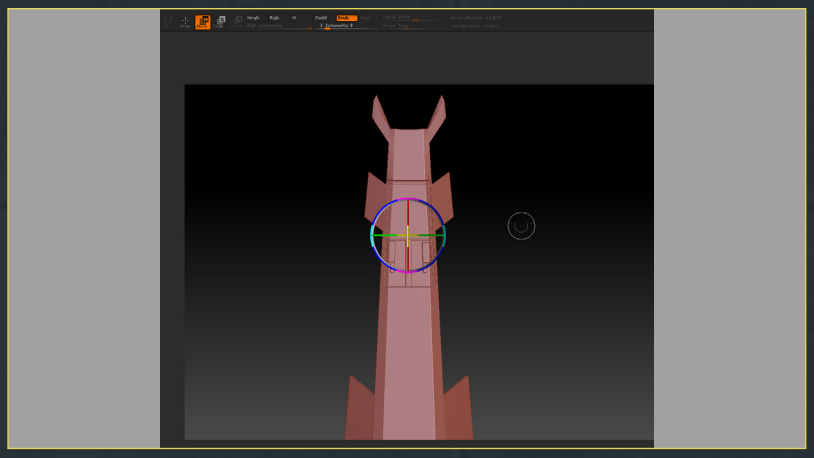
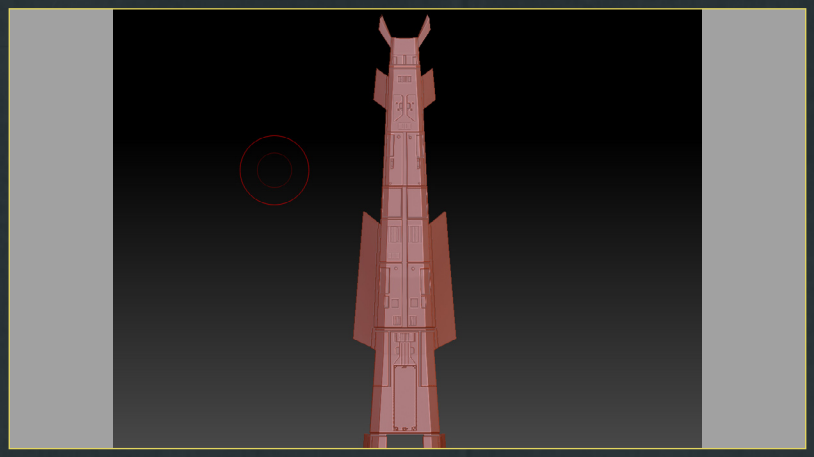


Fig 30



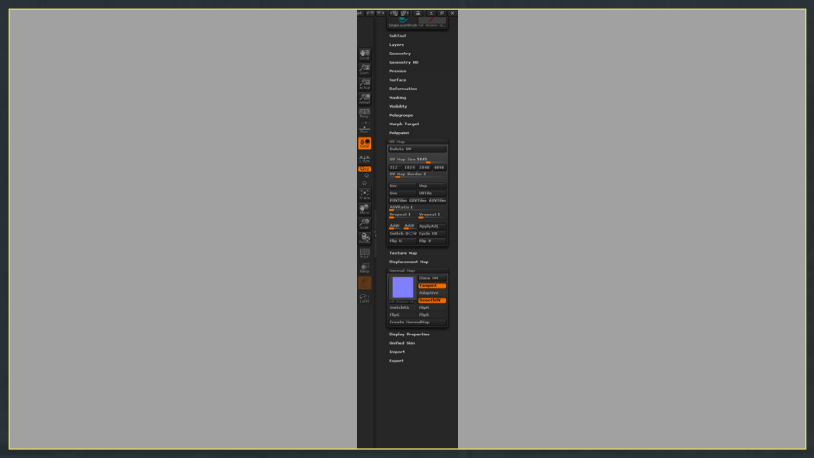
Once you're done with this part of the hull, click on the Projection Master again and click on "pickup now". Repeat this operation for all the sections of the hull, and your final result should look like **Fig.31**.

Fig 31



Once you're satisfied with your sculpting results, check the UV map dimension in the UV map rollout and set the resolution between 2048 and 4096 (use this resolution only if you have a very powerful machine). Then generate a normal map by clicking on "Generate Normal Map" under the UV map rollout (**Fig.32**). Remember to switch on the Tangent option. Once your map is generated, click on "Clone Normal Map", then under Texture Voice in the upper menu click on "Export" and we're done with the normal map texture.

Fig 32



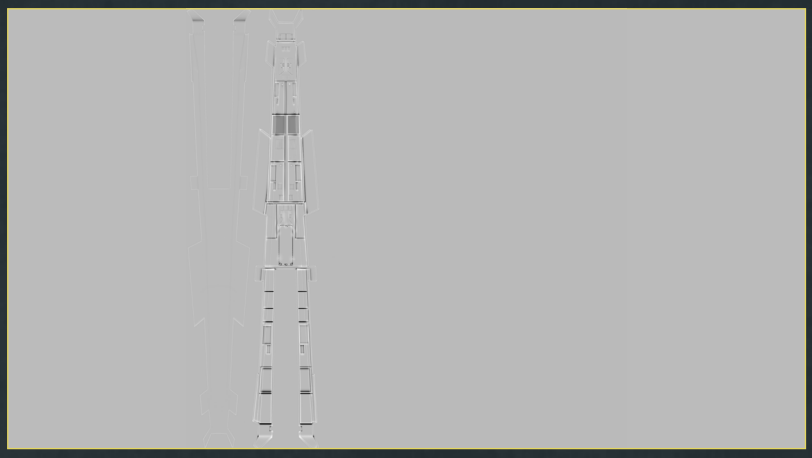


Fig 33

You can even choose to export a displacement map under the Displacement Map rollout that may be used as a starting point to draw the texture in Photoshop (**Fig.33**).



Fig 34

PAINTING THE TEXTURES

It's Photoshop time now! The first thing to do is to prepare a good series of textures to use. I've downloaded some textures from the 3DTotal archive (**Fig.34**). From each image I've taken a detail: a bolt, a rust leak, the cables and the metal texture. Then I've made a base with some flat panels that are a bit like a patchwork.

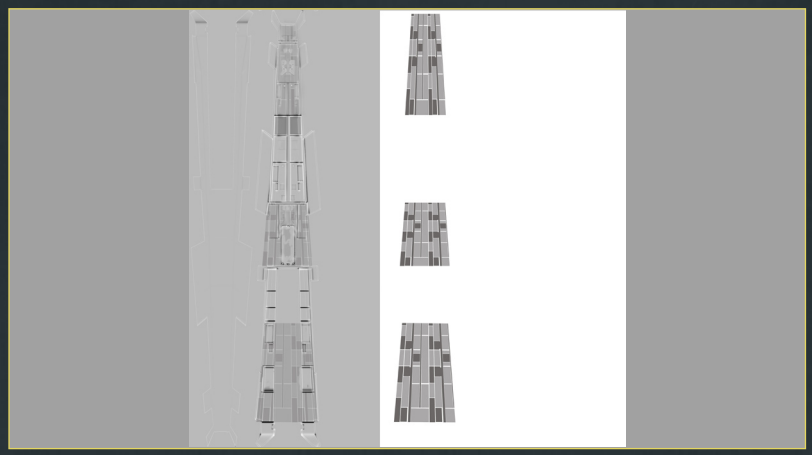


Fig 35

First open the displacement map in Photoshop. Draw a series of flat panels and add them in Multiply mode with the opacity set to 30% (**Fig.35**).

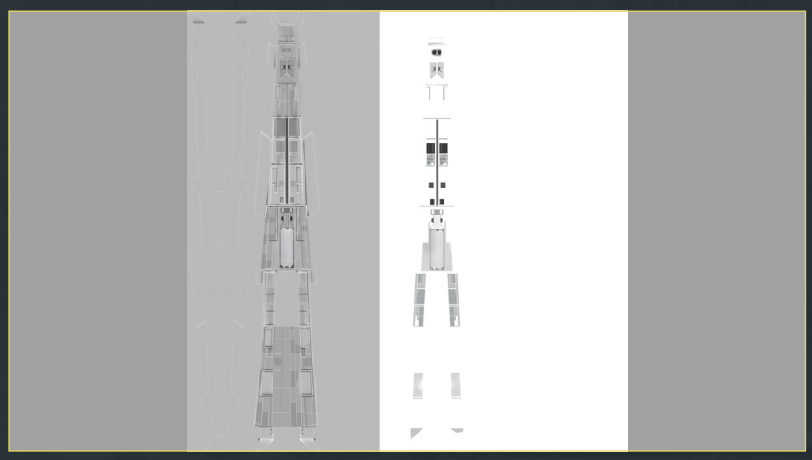


Fig 36

Next add a second series of panels (in Multiply mode or in Overlay, depending on the amount of detail you want to leave). This series of panels will be a mix between some of the alpha brushes you previously used and a series of small details grabbed from the reference images you downloaded before (**Fig.36**). Remember to use the layer opacity to blend the layers with each other.

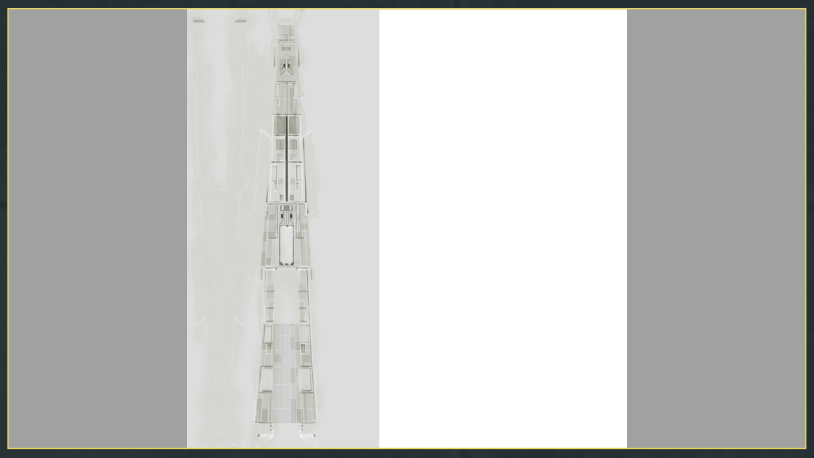
Now add a new layer in Overlay mode with a plain texture taken of the side of a airplane and clone it in a rough way to add some crisp detail to the mesh (**Fig.37**) .

Fig 37



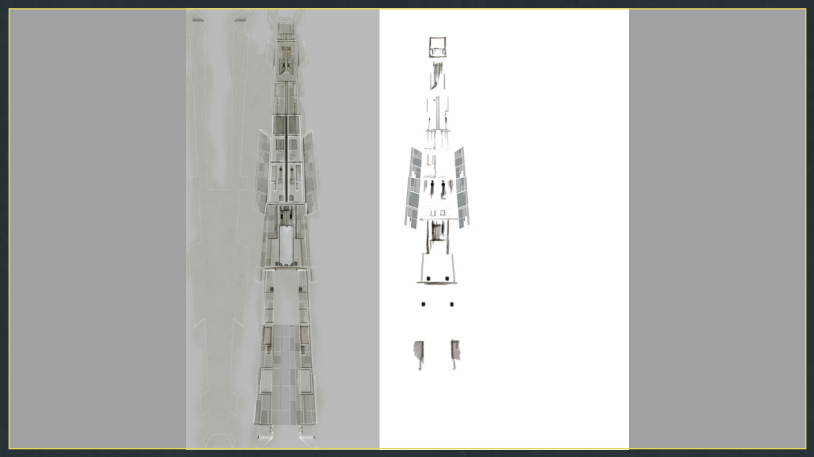
Add a layer of curves to adjust the saturation (**Fig.38**).

Fig 38



Add some new panels on the side and start painting some leaks and dirt on a new layer set to Overlay (**Fig.39**).

Fig 39



I add a new correction, this time with an adjustment layer, changing the Brightness/ Contrast (**Fig.40**).

Fig 40





Fig 41

Finally the last touch is some more rusty leaks (**Fig.41**).

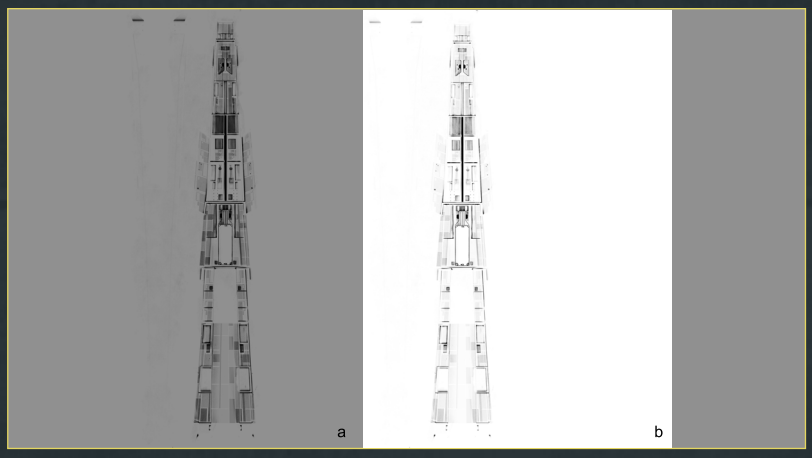


Fig 42

When you are satisfied with your result, flatten the image and save it as “Diffuse”. Open your diffuse then set it to Grayscale mode. Now using Curves, create a specular map (**Fig.42a**) and a bump map (**Fig.42b**).

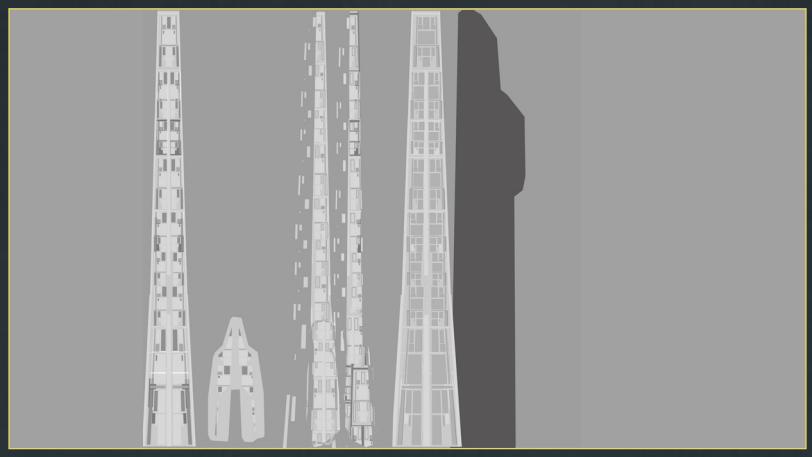


Fig 43

If you don’t want to go from ZBrush you can export a UV snapshot of your UV mapped texture in Maya from the UV Texture Editor > Subdivs > UV snapshot. To export a single UV snapshot from multiple objects you’ll have to combine them together. In the UV snapshot dialog box set the size to the dimension you prefer (the default is 256, 2500, which is the best compromise between weight and detail). Remember to set which image format to export (TIFF or JPG usually).

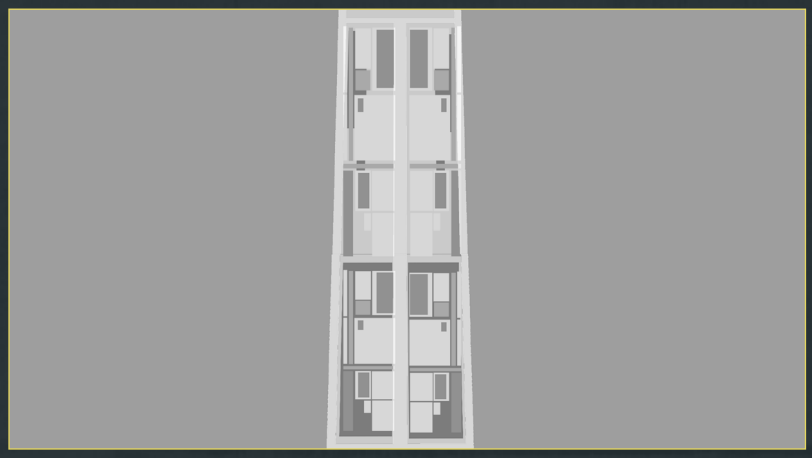


Fig 44

Once exported, open your UV snapshot in Photoshop, then invert it and set the layer to Multiply mode. Since we don’t have the ZBrush base we’ll start drawing our panels using a series of flat shapes, like the alpha brushes of **Fig.27** duplicated as many times as needed to obtain a realistic pattern (**Fig.43 – 44**).

This pipeline is the same as previously explained. Add some realistic details grabbed from some pictures, add a metal texture in overlay mode and paint some leaks to add a weathered look (**Fig. 45 – 47**).

Fig 45

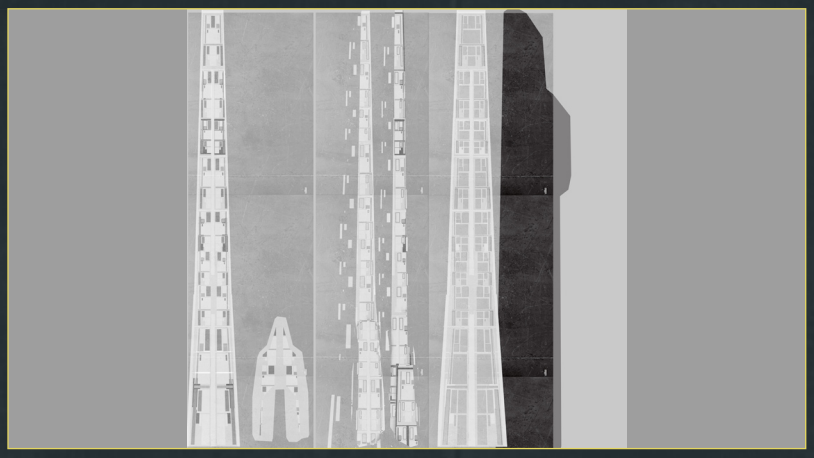


Fig 46

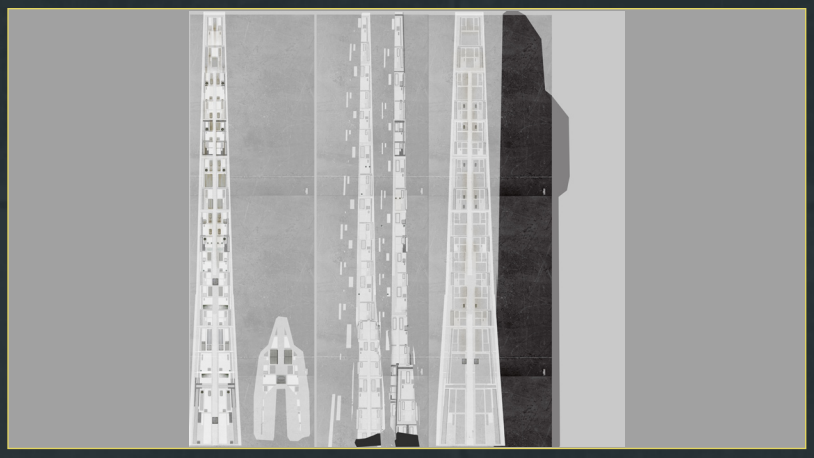


Fig 47



With the same technique I've created all the other textures, like the wings (**Fig.48**).

Fig 48

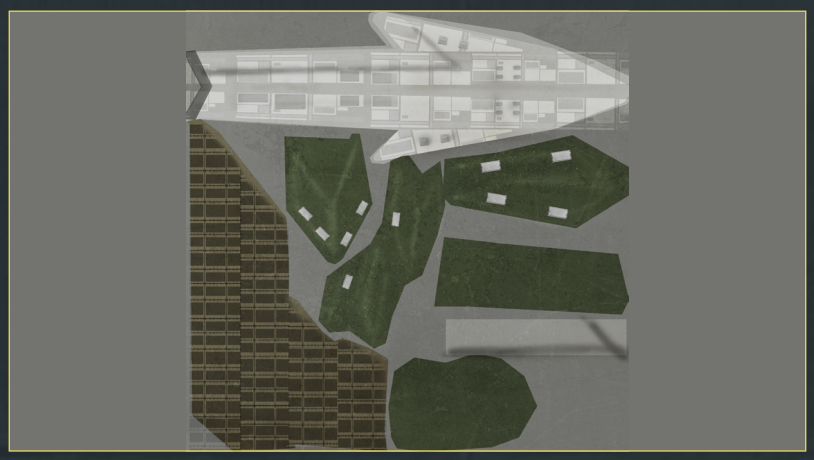




Fig 49

The engine (**Fig.49**).

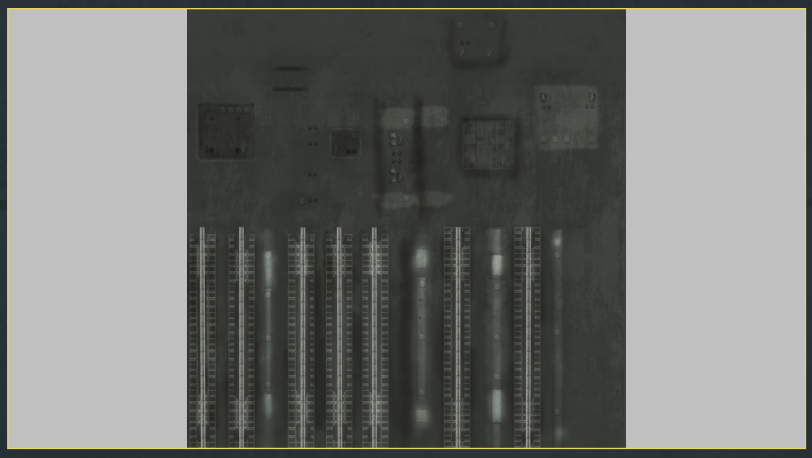


Fig 50

The interiors (**Fig.50**).

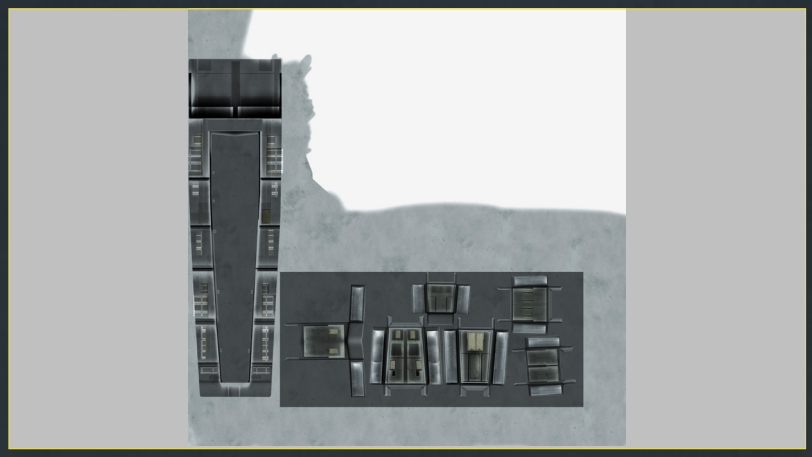


Fig 51

The lower access (**Fig.51**).

Each one of these textures must have a bump map and a specular map derived from your diffuse to obtain a more realistic shader. Once you've created all your shaders, go back into Maya. Go to the Plugin Manager and switch on the "Mayatomr.mll" plugin to activate mental ray. Open Hypershade and hold-click on the Create Maya Node rollout. Choose "Create mental ray" nodes (**Fig.52**).

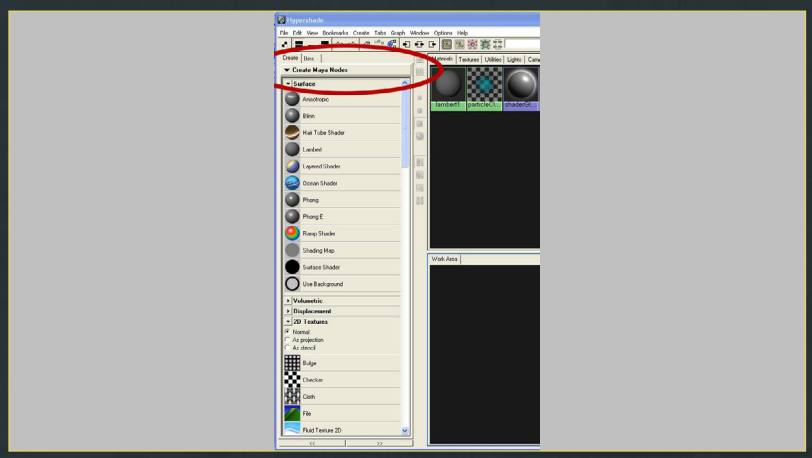


Fig 52

Open the materials section and click on "mia_material_x". A new slot with a shader will appear in the right window. Double-click on it and open the Attribute Editor. "Mia_material_x" has some great features. It supports bump textures and has a series of presets that you'll find in the top-right corner of the Attribute Editor window of the material. Now assign the Diffuse Color by clicking on the checker button near the color slider and in the Create Render Node, click on

"File". Browse your diffuse map and assign it to the shader (**Fig.53**).

Do the same operation for the reflection color and for the bump. Your normal map will have to be linked in the Overall bump slot, and in the Use As rollout check "Tangent Space choose Normal" (**Fig.54**).

When you've added all your maps in the Hypershade window, right-click on the shader slot and select "Graph Network". In the work area you'll see your shader highlighted with all the shading network represented (**Fig.55**).

Since Maya works with nodes, in the Graph network you can see how every single texture is connected to your shader. The final adjustment to your shader concerns the reflectivity, the glossiness and the glossy samples that stand under the Reflection rollout. The default value is 0.6 for Reflectivity and 1.0 for Glossiness. Since we are dealing with metal materials, which are not too glossy, set the Glossy value to an amount of 0.5. Increase Glossy Samples to a value of 16. Increasing this value too much will increase your render time, but it will give a more accurate result. If you want more matte materials you can set Glossy to a lower value. Glossiness color will be handled by the reflection map assigned to the Reflection color.

One last thing to consider is that there are some parts of the ship (the glossy ones or, for example, the tubes, that are really small) that may be shaded in a different way.

For the glossy parts click on the Presets button and choose Chrome > Replace. Now click on the Color Checker button and choose "Ramp". The Ramp shader will control the reflection color, so our glossy material will have a colored reflection, depending on how it is hit by the light. Of course you can change the colors as you please. Just keep in mind that the darker your reflection color is, the less reflective your material is (**Fig.56**).

Fig 53

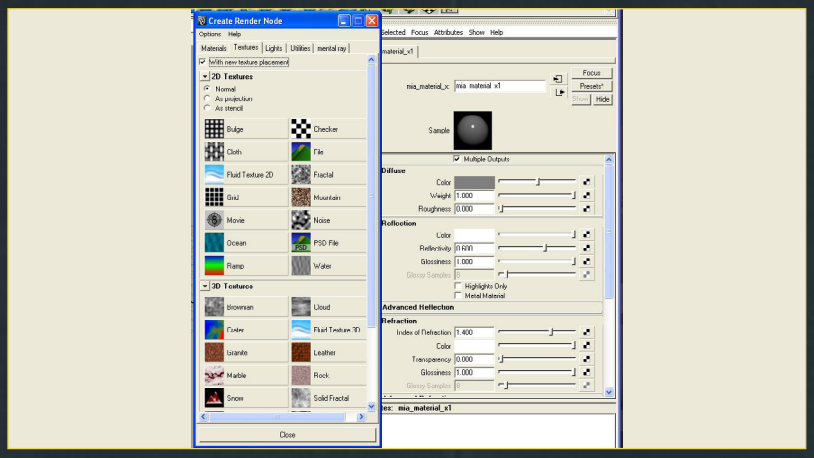


Fig 54

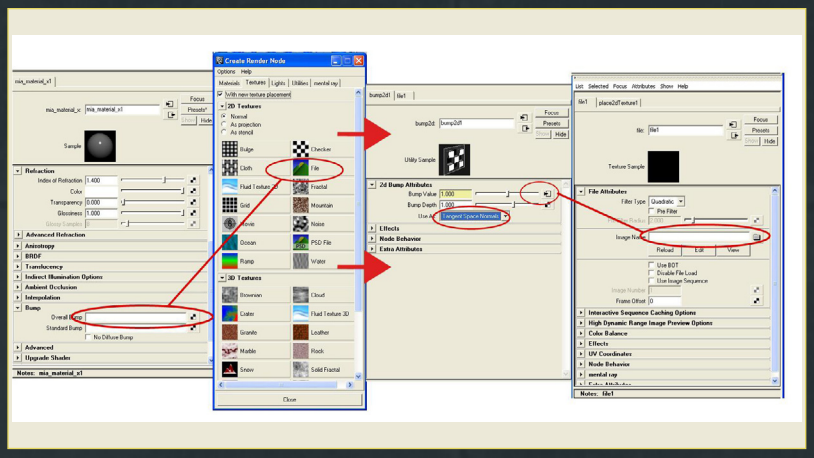


Fig 55

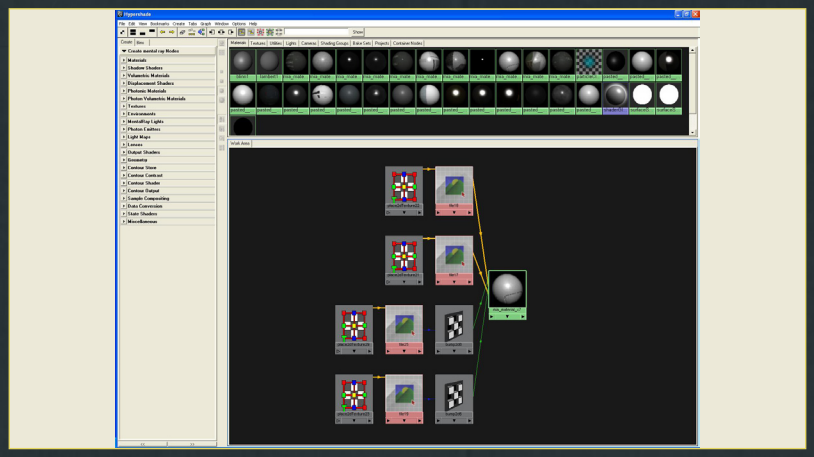
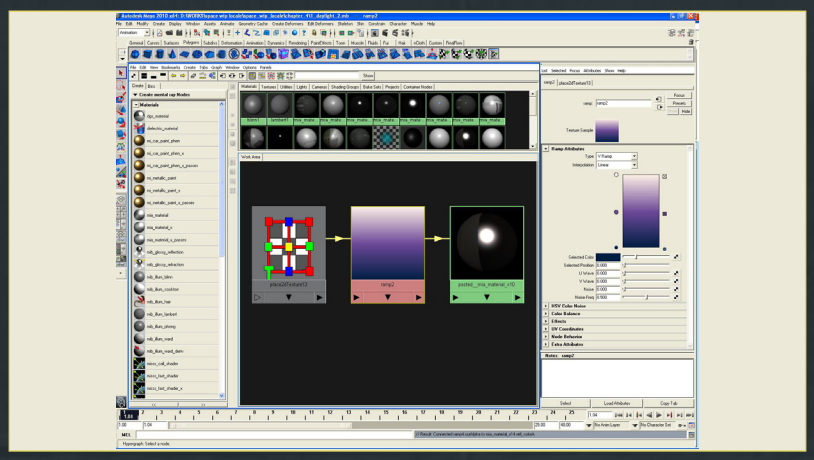
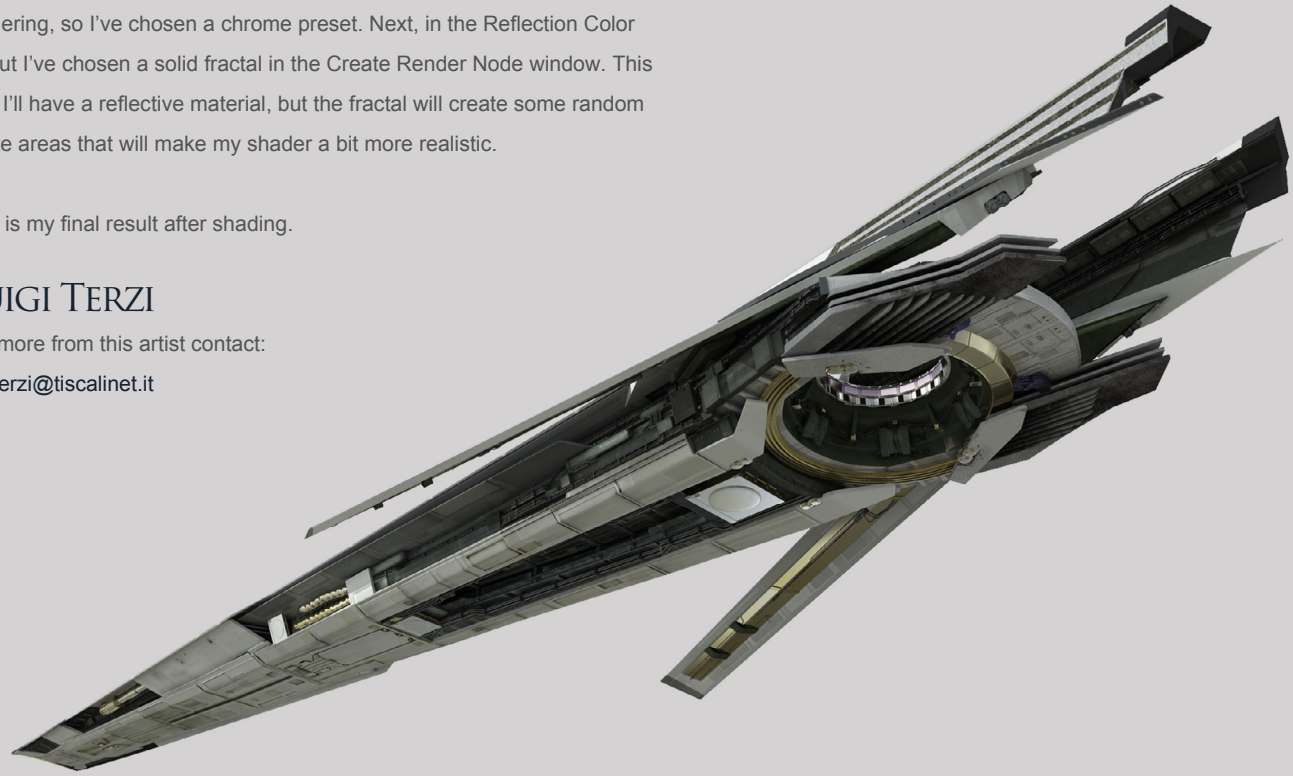


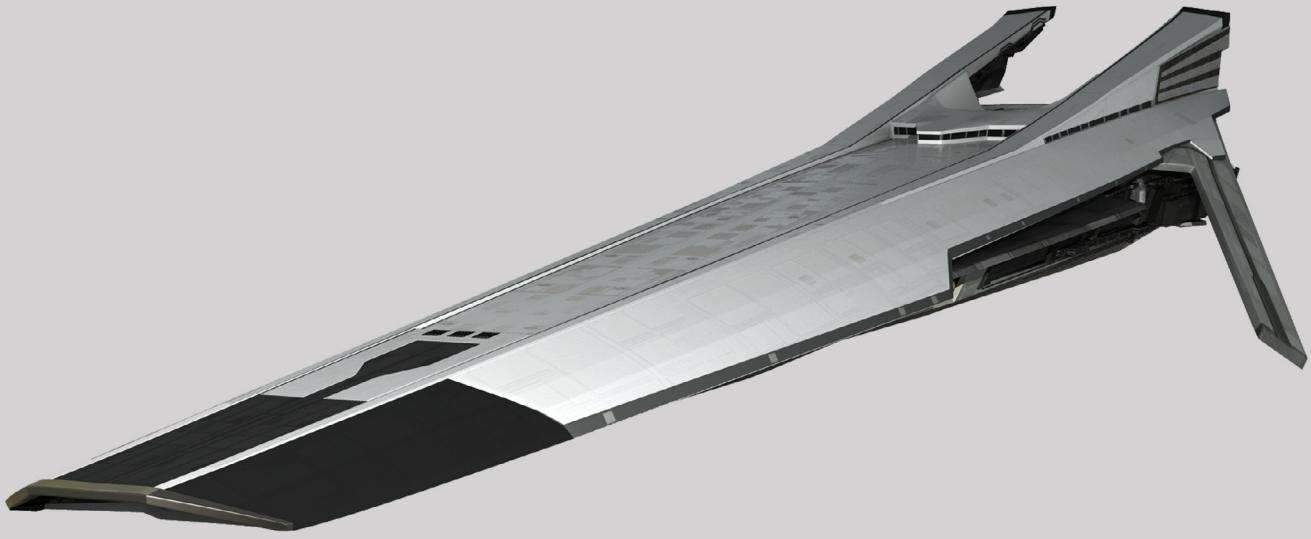
Fig 56



For the tubes we can try a different approach. I wanted the tubes to be more reflective so I have the option of lightening them a bit more whilst rendering, so I've chosen a chrome preset. Next, in the Reflection Color rollout I've chosen a solid fractal in the Create Render Node window. This way I'll have a reflective material, but the fractal will create some random matte areas that will make my shader a bit more realistic.

This is my final result after shading.





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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING



CHAPTER 1 | NOVEMBER ISSUE 063
Concept

CHAPTER 2 | DECEMBER ISSUE 064
Modeling the Low-Poly Version

CHAPTER 3 | JANUARY ISSUE 065
Modeling the High-Poly Version

CHAPTER 4 | THIS ISSUE
Mapping and Unwrapping

CHAPTER 5 | NEXT ISSUE
Texturing

CHAPTER 4 - MAPPING AND UNWRAPPING

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

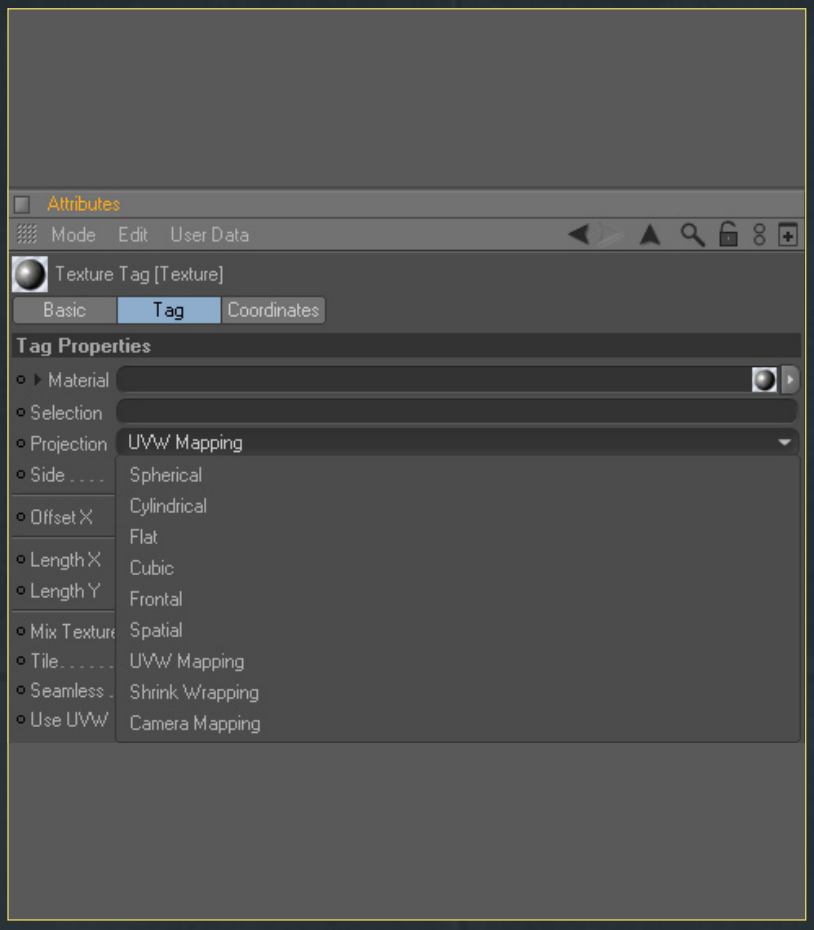
CREATING THE CELERITAS CHAPTER 4- MAPPING AND UNWRAPPING

Software used: Cinema 4D

In this chapter we are going to look at many examples of how we can map our spaceship in the easiest and most efficient way. Cinema4D (and other software) offers many projection shapes (**Fig.01**) including:

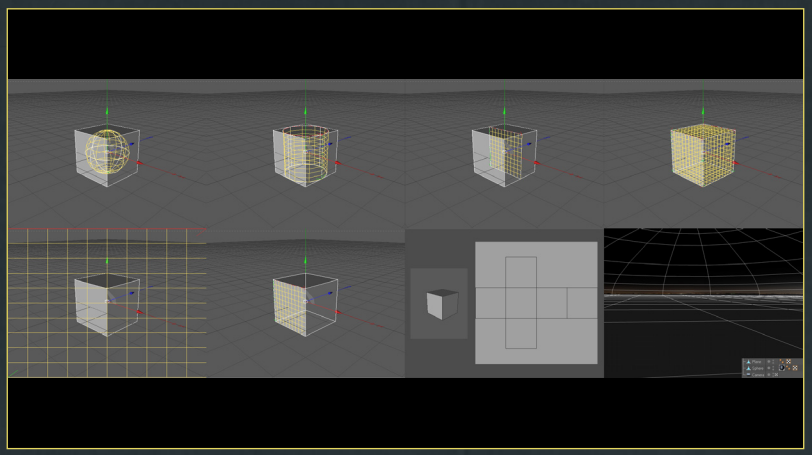
- Spherical
- Cylindrical
- Flat
- Cubic
- Frontal (to static background)
- Spatial
- UVW mapping
- Shrink wrapping
- Camera mapping (to a dynamic background)

Fig 01



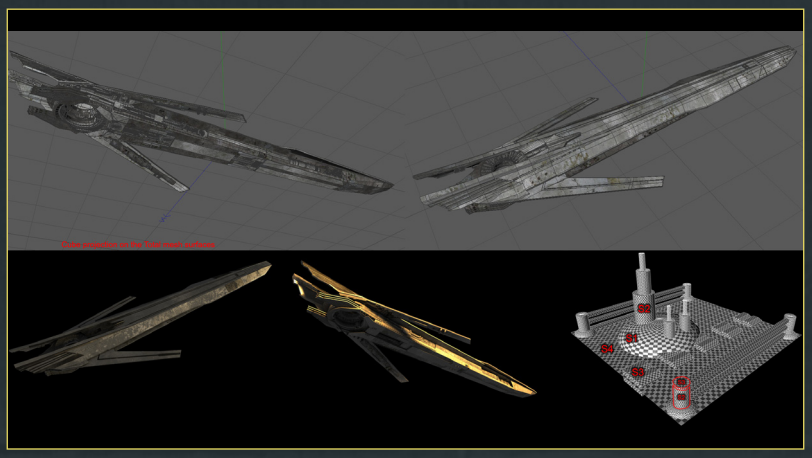
The basic shape projections will work successfully as long as we don't transform it. All the basic meshes have a "plane" UVW map made up of quads. When this map is unbroken, the UVW and the projection will create the same result. After any transformation the UVW will show in both vertical and horizontal stripes.

Fig 02



These projections are very useful when we want to put a simple image on the side of a shape. They are particularly useful when doing small details such as the small plates, antenna, lamps and relays. The situation is slightly different when you are working on a low-poly model. When you do that you will have to unwrap all the meshes. But when doing a high-poly/render model, we can use projections (**Fig.02**).

Fig 03



Let's see some examples of projections on shapes (**Fig.03**):

- Spherical structure S1
- Cylindrical structure S2
- Cube structure S3
- UVW structure S4

We should always use Cube projection as this is probably the best to use when doing the small parts. If you look at **Fig.03** again you will see the ship using Cube projection, which is good but not good enough. In this image a simple texture metal was used.

The most important projection, however, is UVW. This is needed because if we use it then we will be able to paint on the surface of the texture without creating repeated patterns. The spaceship contains some easy shapes which won't be too heavy, but before we do anything to them we should take a look at the UV. The UVW's layout is a part of Bodypaint, which is an important part of Cinema4D. In this we can paint the UVW using 3D or 2D. If you combine this with Photoshop you can create a great outcome (**Fig.04**).

Let's look at the UV commands that we will need (**Fig.05**). We can see here all the commands that we can use and you can see that most of them have an understandable name. I'd like to make particular mention of two of the most important commands: Line Up UV and UV Terrace. The Line up UV tool does exactly what you think it should as it makes all the UV points line up. The UV Terrace tool switches the points or face to a selected region. If you find that there is a problem with the UV poly parts it usually means the terrace is not working, but it could also be a problem with the mirror direction.

The UV is the 3D mesh unfolded and in a 2D version. The best way to think about this is to imagine the shell of your 3D object as a piece of paper. When you make a paper or card cube you start by making a net that will be the shape unfolded, with seams where you would use glue to stick everything together (**Fig.06**).

Fig 04

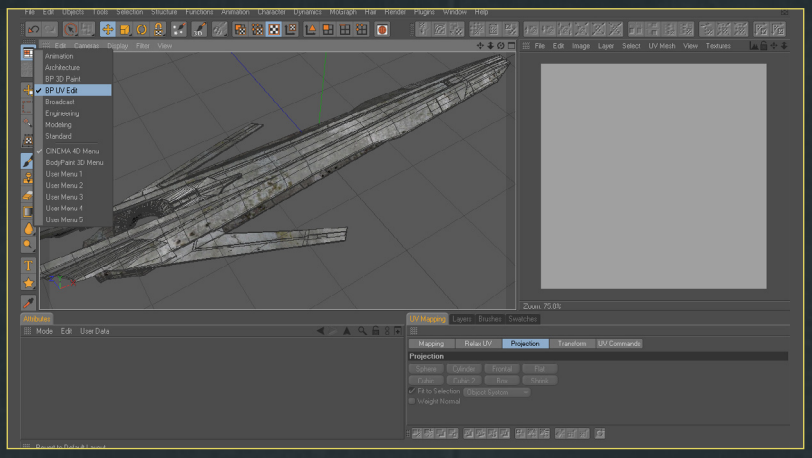


Fig 05

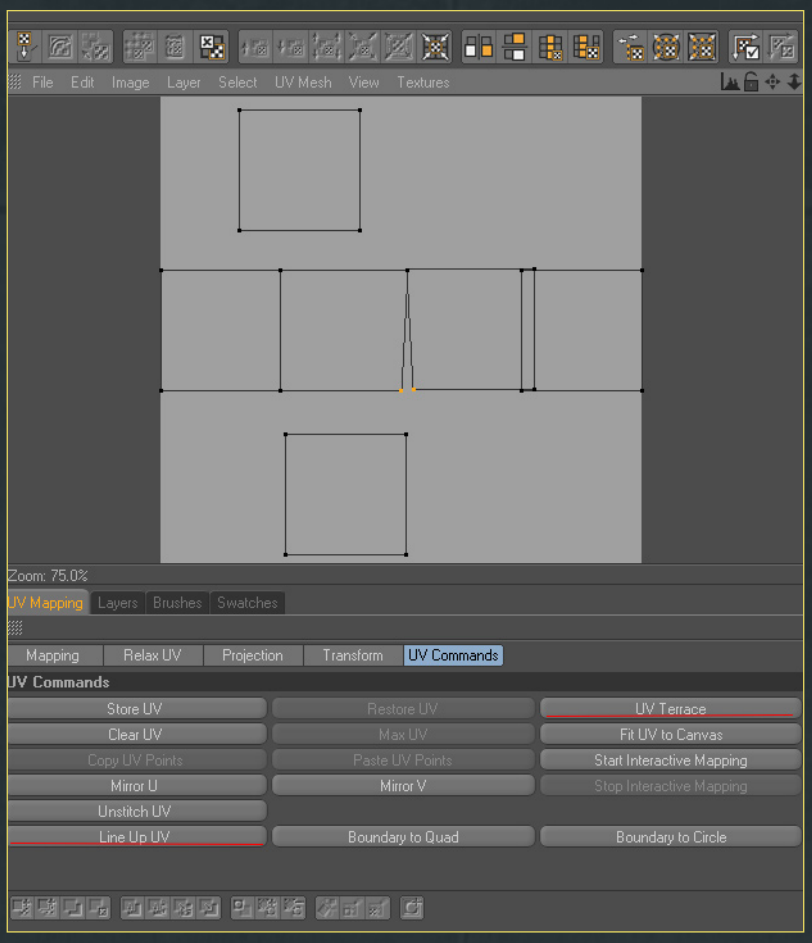
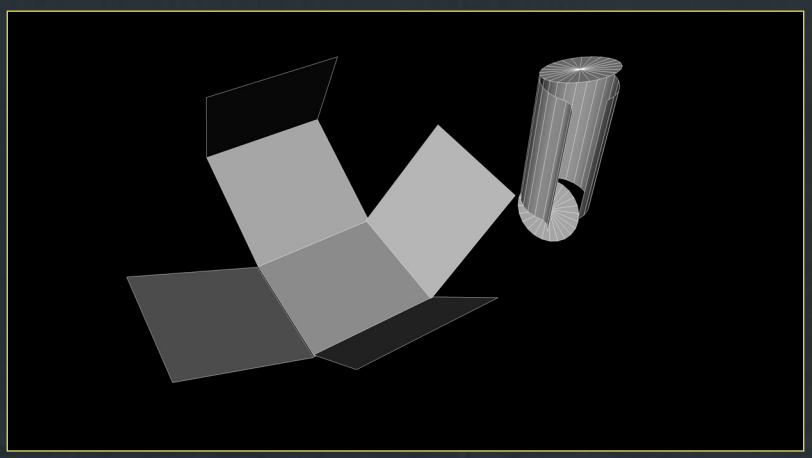


Fig 06



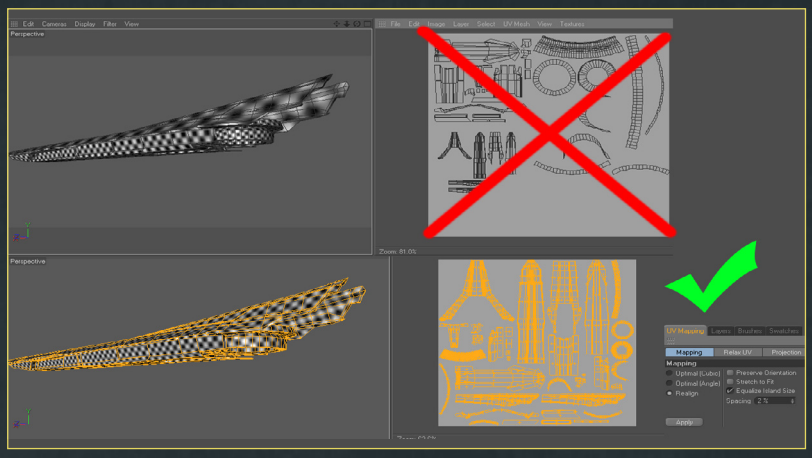


Fig 07

Let's see an example of how we can do a simple UV transform. If you want to UV a simple item then go to the Projection label and you can find some very useful commands. If you would like to unwrap a simple shape it is just a case of a simple click of a button. However if you want to unwrap a more complicated shape it is important to remember the seams (**Fig.07**).



Fig 08

So let's look at how we can unwrap the main body of the ship. It is easier and faster to do this with the lowest count of polygons. Switch to Edge mode and select the desired edges. After you have done this choose the Set Selection command. This is another important tool. By doing this you create a sub-polygon selection and paint the selected edges (**Fig.08**).

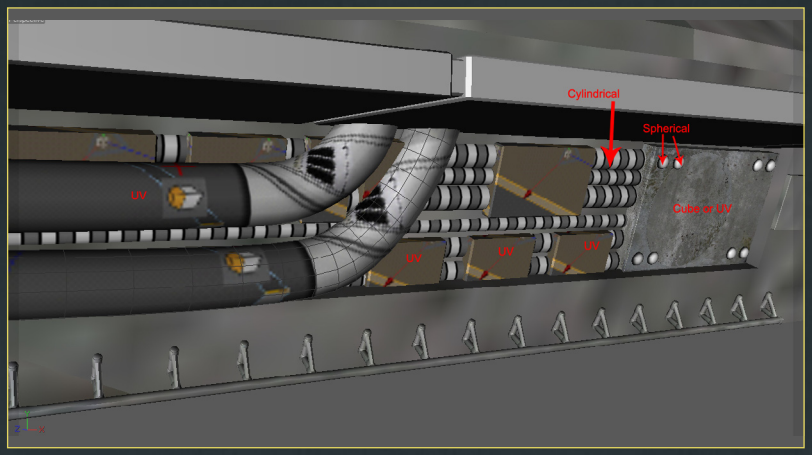


Fig 09

Select the edges and set this selection. Now, you will have a red-lined triangle next to the mesh's name in the Object Editor; click on this. Now all the attributes are displaying. Add the name of the selection, for example: "main_ body_seam". Once you have done this move it to the Relax UV label. You will see a pair of buttons at this point. We will need the lower cells, so pull your selection from there. Next move the projection label there by pressing Ctrl + A to select all, and by using the push button: Frontal. Now the UV is shown in the same form as we can see the mesh in the viewport. This is important because all the neighboring polygons have to switch themselves. After you have done this go to the Relax label and switch it to LSCM/ ABF mode with the Cut Selected Edges cell active. Push Apply. If everything has worked well, the UV is ready (**Fig.09 – 10**).

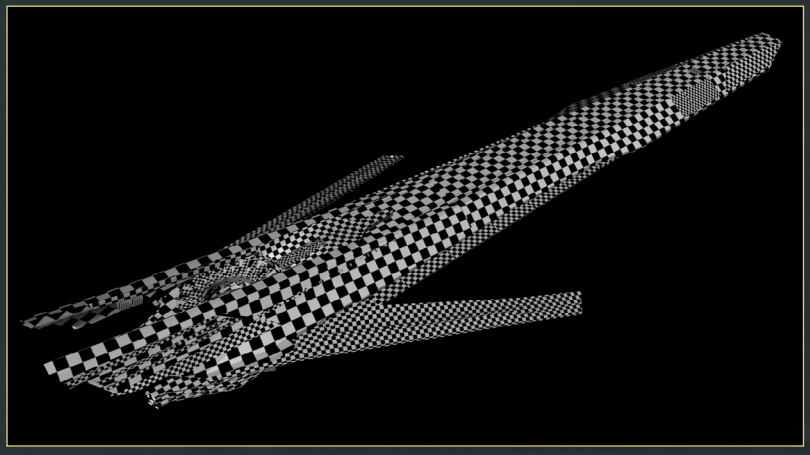


Fig 10

TAMÁS GYERMÁN

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3DC next month

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